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Issue Article

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THE MAIN TRENDS IN THE SPATIAL DEVELOPMENT OF TERRITORIES INCLUDED IN THE ARCTIC ZONE OF THE RUSSIAN FEDERATION. MESSAGE 3

Abstract: *in the article, the object of research is the State Program of the Russian Federation "The main trends in the spatial development of territories included in the Arctic zone of the Russian Federation" for the period up to 2035 as an expression of the policy of the Federal Center pursued in relation to the regions. The subject of the study are the elements of the above program, which, in conflict with regional specifics, hinder the achievement of the goals set in government documents. The analysis of the conducted research is the formation of an understanding of how the regions of the Arctic zone should be taken into account when formulating federal policy aimed at their socio-economic development. In order to achieve this goal, it is necessary to solve a number of tasks, namely:*

a) analyze the State Program, highlighting the main goals and methods for achieving the goals;

b) identify the specific features of the regions that impede the achievement of the goals set;

c) to propose specific ways to include the regional specifics of these regions in the model of the federal policy of the Arctic zone of the Russian Federation.

Key words: *priority, technical regulation, certification, standardization, financial condition, profitability, profit, demand, preferences, relevance, competitiveness, social and economic well-being of the regions of the Arctic zone.*

Language: *English*

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Introduction

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The development of the Arctic today is an important area of activity, and not only for our country. As you know, almost any kind of natural resources can be found in the Arctic, and mining may soon go here at an unprecedented pace. Competent activity strategies will help to use many of the preferences that the Arctic is ready to provide today.

Up to 20% of oil and more than half of domestic gas reserves, deposits of rare metals, gold, coal and other minerals are concentrated under a layer of ice and arctic deserts.

A huge role in the further development of the Arctic is played by the Northern Sea Route - the only highway that is a link for all the subarctic and arctic regions of Russia.

It should also be noted that this highway has a number of undeniable advantages over other transport routes from east to west and from west to east. If you lay a route along the Northern Sea Route, the distance between ports may be half as long. In connection with attacks by pirates on cargo ships in the Gulf of Aden, increased risks in the delivery of goods and the growing costs of shipowners for security, other sea routes have become relevant, including the Northern Sea Route.

The development strategy draws quite favorable prospects for the future of the Arctic. Today, we can talk not only about renewed interest in the Arctic region, but also about real steps being taken to implement the program for the organization of the Arctic territories - polar stations are being restored, the construction of ports has been resumed, new icebreakers are being built, a concept has been developed for creating container ships for year-round navigation in the conditions of the Northern sea route, nature reserves and national parks have been created, including those offering tourist routes.

There are still many problems on this path, but the process is accelerated by the growing interest in the Arctic on the part of the state, business, science and society.

Particular attention to the problems of the development of the region is associated with the onset of global warming. The fact is that local water areas can be freed from ice for a period of one to several months, and this, in turn, opens up new opportunities for navigation.

An increase in the period of ice-free travel along the Northern Sea Route can create more favorable conditions for year-round sea transport, not to mention significant business activity in this part of the RF AZ.

The main task of successful development of oil and gas fields, construction of various facilities, carrying out cargo and transport operations is knowledge of the hydrometeorological features of the Arctic region, which provokes the need for new research into the variability of weather conditions based on meteorological data obtained from weather stations in the Arctic region of the Russian Federation. The main tasks are:

- to study the variability of meteorological conditions at stations in the Arctic region;
- creation of a meteorological database at two stations;
- statistical analysis of meteorological parameters at stations

The Arctic is a single physical and geographical region of the Earth, adjacent to the North Pole and including the margins of the continents of Eurasia and North America, almost the entire Arctic Ocean with islands (except for the coastal islands of Norway), as well as the adjacent parts of the Atlantic and Pacific oceans. The southern border of the Arctic coincides with the southern border of the tundra zone. The area is about 27 million km².

According to the features of the relief in the Arctic, the shelf with islands of continental origin and the adjacent margins of the continents and the Arctic basin are distinguished. The shelf area is occupied by marginal seas - the Barents, Kara, Laptev, East Siberian and Chukchi. The land relief of the Russian Arctic is mostly flat, in some places, especially on the islands, mountainous. The central part is the Arctic Basin, an area of deep-water basins (up to 5527 m) and underwater ridges. The highest point in the Arctic is Mount Gunbjorn (Greenland).

Features of nature: low radiation balance, average air temperatures of the summer months close to 0 °C with a negative average annual temperature, the existence of glaciers and perennial frozen rocks, the predominance of tundra vegetation and arctic deserts.

The territory of the Arctic includes: A huge drifting ice shelf located in the Arctic Ocean, the northern waters of the two oceans of the Pacific and Atlantic, islands and archipelagos, including Greenland, the polar lands of North America and Eurasia, as well as many seas (Figure 1).

Figure 1. Arctic regions of the Russian Federation.

The climate of the Arctic is considered harsh and cold, but as a result of the appearance of cyclones, the temperature can rise sharply to positive values. The average temperatures of the coldest winter month - January - range from -2 ... -4 ° C in the southern part of the Arctic region to -25 ° C in the north of the Barents Sea, the west of the Greenland Sea, in the Baffin and Chukchi Seas and from -32 ... -36 ° C; in the Siberian region, in the north of the Canadian and in the adjacent part of the Arctic basin to -45 ... -50 ° C in the central part of Greenland. The minimum temperatures in these areas sometimes drop to -55...-60 °C, only in the Arctic basin they do not fall below -45...-50 °C. When deep cyclones break through, the temperature sometimes rises to -2 ... -10. Average July temperatures in the Arctic basin range from -0 ... -1°C.

The ice cover of sea areas is about 11 million km² in winter and about 8 million km² in summer. The air here is colder than the water. The air temperature in the Siberian basin is minus 50°C, in the Chukchi Sea the air temperature is minus 36°C. During the polar night, the air temperature constantly drops, because neither light nor heat enters. When the polar day comes, large amounts of heat and light are absorbed by snow and ice. The areas adjacent to the waters of the Atlantic and Pacific Oceans are warmer and have more precipitation, while the climate of the interior is colder and drier.

In winter, the actions of cyclones from the Atlantic Ocean intensify in the Arctic. At this time, high air temperatures, strong winds, maximum rainfall and cloudiness. There are anticyclones in the Siberian part of the Arctic. The winds here are negligible, very low temperatures, little precipitation.

The temperature in the Arctic basin in summer is 0-5°C, very humid (up to 98%), frequent fogs, precipitation in the form of sleet and rain, moderate winds.

The climate of the Arctic has changed significantly over the past 600 years. During this period of time, at least three or four warmings occurred, quite commensurate both in scale and duration with the famous “warming of the Arctic” in the first half of the 20th century.

According to research, the temperature in the Arctic is rising twice as fast as in the rest of the world. This can lead to the extinction of many plant and animal species in the region. Also, warming threatens the existence of the indigenous peoples of the Arctic.

Arctic ice is of great importance for the Earth's climate system. The ice cap reflects the sun's rays and thus prevents the planet from overheating. In addition, Arctic ice plays a large role in the water circulation systems in the oceans.

The total mass of Arctic ice, compared with the level of the 1980s, has decreased by 70%. In September 2021, according to the Hydrometeorological Center, the area of the ice cap reached its minimum for the entire observation period, amounting to 3346.2 thousand km.

It should be taken into account that even before the start of satellite observations (1979), very low ice periods were also observed. According to American scientists who have studied climate change in all areas of the Arctic, in recent years the area of ice cover has

been rapidly decreasing. According to the beginning of 2022, this figure was 14.54 million km². Many experts suggest that in the 21st century, in the summer, most of the Arctic waters will be completely ice-free, and this will open up new prospects for the carriage of goods by sea, but these are forecasts and nothing more.

The official representative states on the shelf are: Russia, Canada, Denmark, Norway, USA. A fairly large part of the Arctic belongs to the Russian Federation. Arctic territories of the Russian Federation:

The land territories of the Arctic zone of the Russian Federation are determined in accordance with the Decree of the President of the Russian Federation dated May 2, 2014 No. 296 “On the land territories of the Arctic zone of the Russian Federation”. They are listed below:

- Murmansk region (in full).
- Nenets Autonomous Okrug (in full).
- Chukotka Autonomous Okrug (in full).
- Yamalo-Nenets Autonomous Okrug (in full).
- Some territories of the north of the Komi Republic.
- Some territories of the north of the Republic of Karelia (added by decree of the President of the Russian Federation of June 27, 2017 No. 287).
- Some territories of the north of the Republic of Sakha - Yakutia.
- Some territories of the north of the Krasnoyarsk Territory.
- Some territories of the north of the Arkhangelsk region.
- Lands and islands located in the Arctic Ocean, indicated in the resolution of the Presidium of the Central Executive Committee of April 15, 1926 "On declaring the territory of the Union of the Soviet Socialist Republic of lands and islands located in the Arctic Ocean" and other acts of the USSR. Arctic issues are constantly considered at the sites of the United Nations (UN) and the European Council, as well as the Northern Forum, which is an international organization uniting the Arctic regions and municipalities. In 2019, the Governor of the Nenets Autonomous Okrug of the RF AZ was the Chairman of the Northern Forum, which involves the development of cultural interaction and improving the quality of life in the North. Russia is the only country where the border of the Arctic is fixed by law - by decree of the President of the Russian Federation, the Arctic zone of the Russian Federation (AZRF) is allocated. The latest version of the Arctic borders is enshrined in Decree No. 220 dated May 13, 2019. Climatically, the Arctic may be located south of the modern Arctic zone, the Republic of Sakha (Yakutia) has long defended the need to include the second line of Arctic uluses in the Russian Arctic. The development strategy of the Russian Arctic suggests that it will become a special zone of economic activity that provides benefits for companies (Figure 2).

Figure 2. The Arctic zone (purple sector), the zone of the Far North (turquoise) and equivalent regions of the Russian Federation (blue)

The concept of "Far North" has existed since the 30s of the last century, since the 40s the concept of "Regions of the Far North and equivalent areas" has appeared. In Russia, there is also a category of territories called "Regions of the Far North and equivalent areas with a limited period for the delivery of goods." It is more economically advantageous to deliver goods to hard-to-reach areas by water, but in the case of only small and shallow rivers, the delivery time can be as little as two weeks. In these territories, prices are regulated, for exceeding their threshold value by an entrepreneur, fines are provided, and priority importation of medicines is carried out.

SevaArctic Ocean located in the polar belt, which determines it climatic conditions. The existence of huge masses of ice (in the central part of the Arctic Basin, the ice cover persists throughout the year) further enhances the severity climate due to the features solar radiation within the polar zone. Throughout the year, an anticyclonic process takes place over the Arctic Ocean and cyclonic activity develops. In the lower layers of the atmospherefers

polar anticyclone well expressed only in winter. In summer it is much weaker, and in July its center shifts to Beringova the strait, and in August it shifts again to the west. During the winter months, the waters of the Arctic Ocean, which have a reserve of thermal energy, are constantly replenished by waters from Atlantic, warm the atmosphere, give directly and through the ice cover their heat to the cold Arctic air. As a result, over the Arctic Basin tempeair temperature it falls below -40°C less frequently than in neighboring land located at lower latitudes: in the Verkhoyansk-Oymyakon region, it drops to -67°C and about 64°N. sh. up to - 70 ° C.

Medium air temperature in winter months in various regions of the Arctic Ocean it fluctuates from + 3 to - 40 °C, in summer - from 0 to + 10 °C.

The characteristics of the temperature regime in the regions of the RF AZ are given in Table 1.

Table 1. Characteristics of the temperature regime in the regions of the Arctic Zone of the Russian Federation

	cold season	The lowest recorded t	warm season	Average annual t
Republic of Karelia	-9.0 °C to -13.0 C	-54.0°C	from + 14.0°C to + 17.0°C	from 0°C in the north to 3°C in the south
Murmansk region	- 9 -10 °C	-45 °C on the White Sea coast and -51 °C in the central regions	+9°C to +11°C	-8 °C
Arkhangelsk region	-11-14oC	-45.2°C	+10 - +12°C	+0.8°C
Nenets Autonomous Okrug	-17-20oC	-47.6 C	+5 - +7ºC	from −1 C in the southwest to −9°C in the northeast
Yamalo-Nenets Autonomous Okrug	−9°C to −20°C	-59°C	from +6°C in the north to +13°C	−10 °C
Krasnoyarsk Territory	-16.0 C	-52.8 C	+18.7 C	+2C
Republic of Sakha (Yakutia)	-36.3°C	-50 C	20.0°C	-7.5°C
Chukotka Autonomous Okrug	-16 to -40	−61°C	+5 to +13	-4.1°C
Republic of Komi	-15 to -22°	-55 C	from +11 to +17	-1 °C
The average air temperature in the winter months in various regions of the Arctic Ocean ranges from + 3 to - 40 ° C, in summer - from 0 to + 10 ° C.				

Main part

To provide the population of the regions of the AZ of the Russian Federation with comfortable clothing, it is first necessary to analyze the climate of all territories that are included in these same territories.

The Republic of Karelia is a picturesque region popular with Russian and foreign tourists. Here combine untouchednatural beauty, amazing sights and a modern level of service. Karelia welcomes guests all year round, but its changeable climate can greatly surprise an unprepared tourist. We will tell you why, when going to Karelia in the summer, it will not be superfluous to take a warm jacket with you.

The climate in Karelia is transitional, from maritime to continental. Proximity to the northern seas - the Barents, Baltic and White - somakes itself known; cyclones constantly circle over Karelia, bringing with them increased humidity and a large amount of precipitation at any time of the year. Because of all this, the weather in Karelia is unstable and always ready to surprise. No wonder the locals joke that when leaving the house in the summer, you need to take sunglasses and an umbrella with you.

Although, of course, in fact, everything is not so sad. Summer in Karelia is quite real, hot, with sandy beaches and sunburn. By the way, it is believed that the northern tan lasts longer than the southern one, and you can burn out in the midday July sun here just as easily as somewhere in Anapa. At the same time, this is still the North, so serious positive temperatures here are set strictly according to the calendar - in early June. Although if you are not too picky about the coolness of the night, then the end of May can already be considered the beginning of summer.

In summer, the average air temperature in Karelia is:

in June - 20 ° C during the day, 11 ° C at night; in July - 20 and 14 ° C;

in August - 20 and 13 ° C.

Of course, there are also very hot days here, much higher than the standard +20 °C. For example, the highest temperature record in Karelia was +36.0°C. Moreover, due to the increased humidity, heat and cold are perceived more strongly here than in drier regions.

Autumn comes to Karelia almost according to the calendar, in late August - early September. The nights are getting colder, the rains are getting longer, and the trees are rapidly covered with shining gold and crimson, turning Karelia into a magical kingdom. But Karelian autumn also has its advantages. For example, many tourists consider September to be the most suitable month of the year for hiking in the forests of Karelia. The temperature has not yet fallen below comfortable values, the suffocating heat does not annoy, and besides, the annoying gnat, which is dark here in the summer, almost completely disappears from the forests. In September, there are still berries and mushrooms in the forests, but still, if collecting wild ones is your main goal, then it is better to go for them in the second half of August. The average air temperature in Karelia in autumn by months:

September - 15 and 9 ° C;
October - 9 and 4 °C;
November - 2 and -2 ° C.

In fact, autumn in Karelia lasts no more than two, two and a half months, and very often in November there is already snow everywhere, marking the arrival of a long northern winter.

Winters in Karelia are snowy, frosty and stunningly beautiful. Perhaps that is why the flow of tourists here does not subside even in the cold season. The long New Year holidays provide an opportunity to try all the entertainment that Karelia has to offer, and, of course, visit all the available attractions, which are not few here. By the way, most of the Karelian sights are interesting even in the cold season. And some, for example, the Ruskeala mountain park, are so good that you want to see them twice: in winter and summer.

As for the frosts, then, of course, it could not do without them. The coldest month of the year is January, the average monthly temperatureat this time it fluctuates from -10 to -14 °C. Such, in fact, low average values are possible here due to the variability of the Karelian climate already known to us. A burning morning frost below -30 °C may disappear without a trace by noon, replaced by light snow and quite comfortable temperatures in the region of -5 -10°C. Average winter temperature in Karelia by months:

December - - 6 and - 9 ° C;
January - - 10 and -14 ° C;
February - - 9 and - 13 ° C.

It is important to remember that the region has high humidity, and in such a climate, even a slight frost will be felt more strongly than it would be in drier areas. It is especially important to take this into account in February, when winds and heavy snowfalls come to Karelia. So, if you are planning to visit the republic in winter, then do not forget to seriously warm up, and, of course, choose the right clothes for children.

Spring in Karelia is as short as autumn. March is considered a spring month for the most part nominally, because at this time there is still snow everywhere and it is quite frosty. Karelian nature is reluctant to wake up from its winter sleep, and quite often, especially in the northern regions of the republic, snow remains even in April. Only closer to May does a truly spring temperature begin to set in here, and during the day the thermometer consistently shows positive values. But still, the Karelian spring is weak and transient, and until the end of June, the danger of frost remains here. Average temperature in Karelia in spring:

March - -4 and -7 ° C;
April - 3 and 0 °C;
May - 8 and 6 °C.

By the way, professional rafters prefer to raft along spring rivers filled with melt waters, making the most of this time of year to get as much adrenaline as possible.

Climate in the Murmansk region

During the year, the average air temperature in Murmansk is 2.1°C. The coldest month in Murmansk is January with an average temperature of -12.4°C, and the warmest is July, when the thermometer rises to an average of 13.2°C. Average atmospheric air pressure and humidity in Murmansk throughout the year The average annual atmospheric pressure in Murmansk is 753 mm Hg, and the air humidity is 78% Frequency (%) of clear, cloudy and overcast skies in Murmansk during the year Enter the name of the locality Weather archive in Murmansk Local time: 16:02 Temperature, °C Average monthly Average maximum Average minimum January February March April May June July August September October November December -30 -25 -20 -15 -10 -5 0 5 10 15 20 25 .

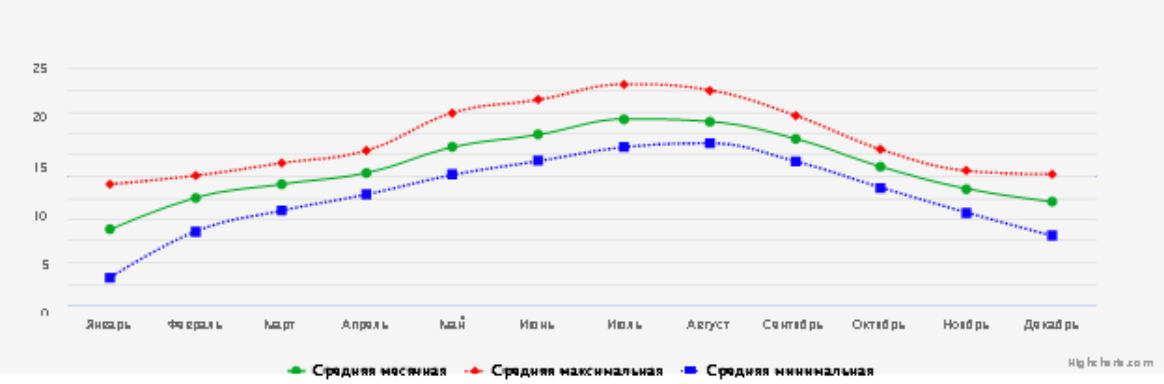


Figure 3. Characteristics of the temperature regime in the Murmansk region

Climate in the Arkhangelsk region

The region is located in the north of the East European Plain. Includes the Solovetsky archipelago. The territory of the region is washed in the west by the waters of the White Sea, forming bays - Mezensky, Dvinsky, Onega. The region covers an area of 311.5 thousand square meters. km (excluding the NAO, the islands of Franz Josef Land and Novaya Zemlya). The region has a dense network of rivers and lakes. All rivers (except the Ileksa River) belong to the Arctic Ocean basin. The largest rivers are the Northern Dvina (with tributaries of the Vychegda, Pinega and Vaga), Onega, Mezen. There are many lakes in the region, especially in the Onega basin. The largest lakes are Lacha, Kenozero and Kozhozero. In the north, the region borders on the Nenets Autonomous District, in the east on the Komi Republic, in the south on the Vologda and Kirov regions, in the west on the Republic of Karelia.

Duration of cold (average air temperature below 0°C) / warm (average temperatureair above 0°C) periods vary from 197/168 to 165/200 days across the territory. In the Mezensky, Leshukonsky and in the north of the Pinezhsky district, the cold period is longer than the warm one by 3-29 days, in the rest of the territory the picture is reversed - the warm period is longer than the cold one by 3-35 days.

In the south, the warm period begins in early April, in the north - in late April - early May. In autumn, the transition of the average daily air temperature through 0°C to negative occurs in the second - third decade of October.

The annual course of air temperature in different parts of the territory under consideration is of the same type, the differenceonly in amplitude. On the coast, the difference in air temperatures between the coldest and warmest months is 20-24°C, in continental regions - 29-33°C.

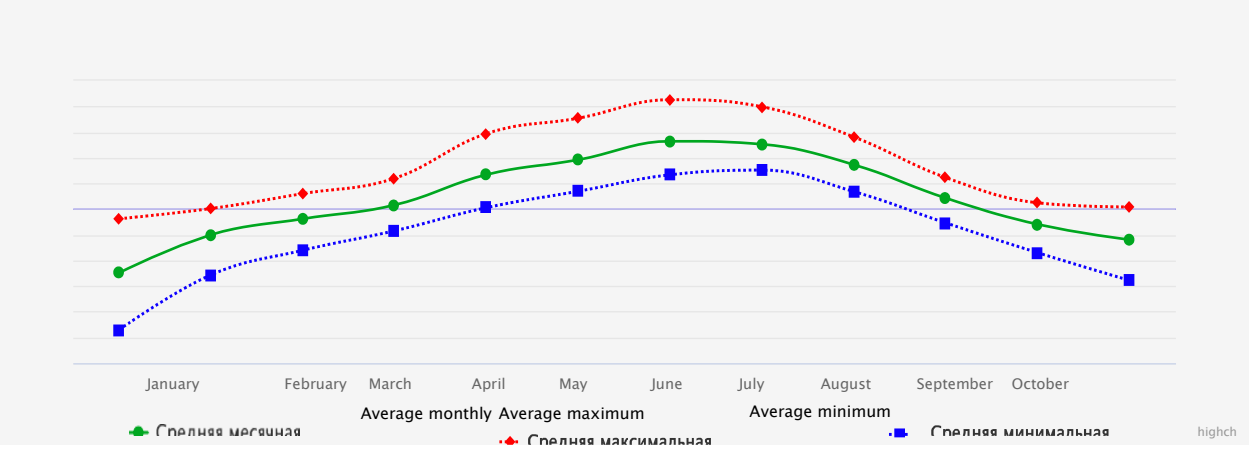


Figure 4. Characteristics of the temperature regime in the Arkhangelsk region

The warmest month of the year is July, the coldest is January.

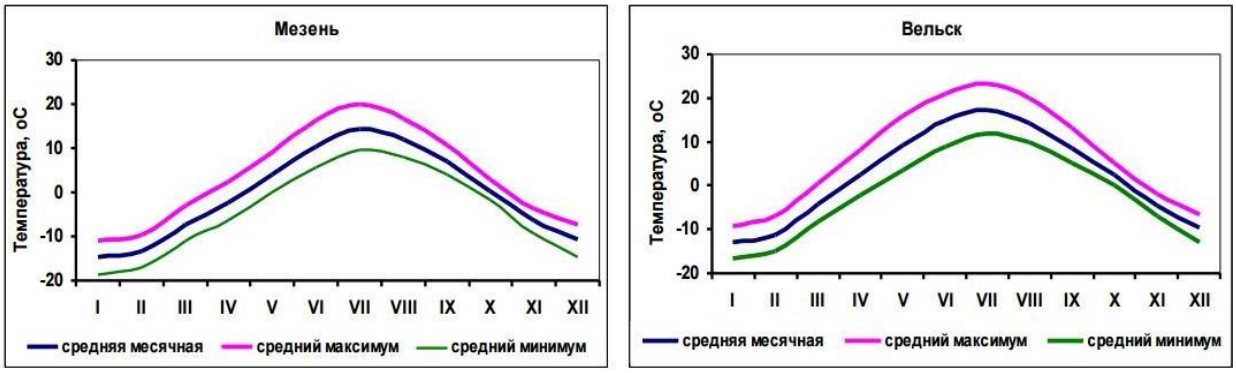


Figure 5. Characteristics of the average monthly air temperature, average maximum and average minimum.

On the coast, winters are milder, the average temperature for the season is -8 ... -10 ° C. As we move deeperterritory, its severity increases and the average temperature for the winter is -11 ... -14 ° C. On some days the air temperature can drop to -50…-55°C in the east and north-east, to -40…-42°C on the coast. In summer, the air temperature decreases from south to north. The average temperature during the summer varies from 14-15°C in the southern and central regions to 10-12°C in the north. The maximum air temperature on some days reaches 33-36°C.

The average maximum temperature characterizes the warmest part of the day (afternoon hours), the average minimum temperature characterizes the temperature of the coldest part of the day (night hours).

The annual course of the average maximum and minimum air temperature is similar to the annual course of the average monthly temperature (Figure 5).

The geographical distribution of different wind directions and speeds is determined by the seasonal state of the atmospheric pressure field. In the cold season, the wind regime of the territory under consideration is formed mainly under the influence of the Icelandic low. From September to March, the winds of the southern quarter prevail - southeast, south, southwest.

In April, winds of both the southern and northern quarters are equally probable almost everywhere.

In summer, the intensity of the general circulation of the atmosphere over the entire Northern Hemisphere decreases. The western part of the Barents Sea is under the influence of an area of high pressure, the north of the European part of Russia is in a zone of low pressure associated with the warming of the continent and the winds of the northern and northwestern directions prevail.

In general, during the year, the winds of the southern quarter prevail in most of the region, however, local features of the relief exert their influence on the wind regime.

Climate in the Nenets Autonomous Okrug

The Nenets Autonomous Okrug (NAO) is located in the north of the East European Plain, most of it is located above the Arctic Circle. Includes the islands of Kolguev and Vaygach, the Kanin Peninsula. The territory of the district is washed in the west by the waters of the White, in the north of the Barents and Pechora, in the north-east of the Kara Sea, forming numerous bays - bays: Mezenskaya, Czech, Pechora, Khaipudyrskaya, etc. The territory of the district, together with the islands of Kolguev and Vaigach, is 176.81 thousand. sq. km.

On the territory of the Nenets Autonomous Okrug there is a dense network of small rivers and small lakes, often connected by short channels. The main river is the Pechora.

In the south, the district borders on the Komi Republic, in the southwest - on the Arkhangelsk region, in the northeast - on the Yamalo-Nenets Autonomous District.

The thermal regime of air is formed under the influence of atmospheric circulation, the radiation regime and the underlying surface, as well as local conditions.

The average annual air temperature decreases from west to east from -1.0…

-1.5ºC to -7.0ºC on the coast, from -3.0ºC to -5.0ºC in inland areas.

The annual course of air temperature in different parts of the territory under consideration has its own characteristics. On the coast, the difference in air temperatures between the coldest and warmest months is 19-28°C, in continental regions - 30-33°C.

The duration of the cold period (average air temperature below 0°C) increases from west to east from 205 to 245 days, while the duration of the warm period (average air temperature above 0°C) increases in the opposite direction.

A stable transition of air temperature through 0ºC to a positive temperature in spring in the west is observed on average in the first ten days of May, and in the extreme northeast - a month later.

In autumn, negative temperatures in the east are set in the first decade of October, in the west - in the

second, on the Kanin Peninsula - in the third decade of October.

The warmest month of the year is July, and the coldest months are January-February (Figure 6).

In the west, winters are milder. As you move east, its severity increases. The average winter air temperature in the west is -8…-14ºC, in the east - 17…-20ºC. On some days, the air temperature can drop to -45 ... -54ºC.

In summer, the northeastern part of the European territory of Russia is in very favorable lighting conditions, but a large amount of heat is spent on melting snow and ice, warming up air masses, so the temperature in summer is low.

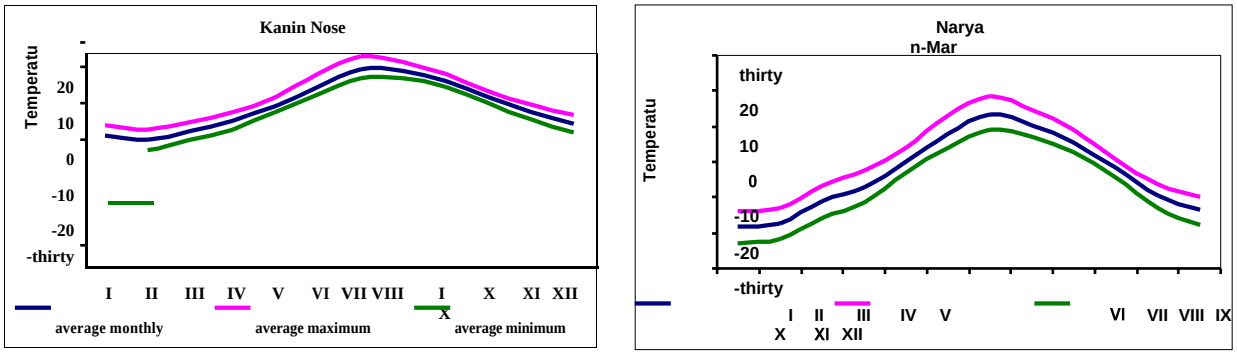


Figure 6. Annual variation of air temperature in the Nenets Autonomous Okrug

In summer, the air temperature decreases in the direction from south to north. The average temperature per season varies from 10-11°C in the south to 5-7°C in the north. The maximum air temperature on some days reaches 30-34ºC.

The annual variation of the average maxima and minima is similar to the annual variation of the average monthly temperature, since it is determined by the same circulation processes and the characteristics of the underlying surface.

The geographical distribution of different wind directions and speeds is determined by the seasonal state of the atmospheric pressure field. In the cold season, the wind regime of the territory under consideration is formed mainly under the influence of the Icelandic low. From October to March, predominantly southerly and southwesterly winds prevail over most of the territory. In April and May the winds are unstable. On the coast, the winter distribution of wind direction recurrence mainly remains. In continental regions, there is a high frequency of western and northwestern directions.

In summer, there is a further weakening of the intensity of the general circulation of the atmosphere over the entire Northern Hemisphere. Atlantic cyclones move along more southerly trajectories compared to the cold period. In the western part of the Barents Sea there is a weakly expressed area of high pressure, the north of the European part of Russia is located in a zone of low pressure associated with the heating of the continent. In accordance with this, arctic air often enters the continent from the north, and northern winds prevail.

The beginning of autumn is characterized by the intensification of cyclonic activity, the frequency of southwestern winds, characteristic of the winter season, increases.

Climate in Republic of Komi

The geographical position of the Komi Republic in relatively high latitudes, its remoteness from the warm Atlantic Ocean and the proximity of the vast Asian continent cause a temperate continental climate in the republic, which differs significantly from the climate of the rest of Europe. The large length of the republic from south to north and from west to east, as well as the variety of physical and geographical conditions, create a significant difference in the climate of its individual regions.

The climate of the Komi Republic is severe: summer is short and cool, and cold in the northern regions; winter is snowy, long and frosty. During the year, a significant amount of precipitation exceeds evaporation.

Winter on the territory of the republic is cold and is the longest period.

The cold period of the year in the north-east of the republic lasts 230-250 days, in the south 170-180 days. As we move to the northeast, not only the duration of the cold period increases, but also its severity. In the coldest month of the year (in January), the average monthly air temperature in the south of the republic is about -15°C, and in the northeast -21°C, -22°C. On some days, during the intrusions of arctic air, the temperature can drop to -55°C in the north and in the central part, and to -45°C in the south of the republic.

Summer in the republic is moderately warm. In summer, the northern part of the republic is in very favorable lighting conditions. To the north of the

Arctic Circle, the polar day is established, during which the sun does not set below the horizon. Due to this, the earth's surface receives a significant amount of solar energy. However, a large amount of solar radiation is reflected by the earth's surface, and is also spent on melting snow, on evaporation of moisture, on warming up the soil, as a result of which the temperature in summer is not high here.

In summer, on clear and especially on calm days, the soil temperature is usually much higher than the air temperature. Even in areas where permafrost is already at a depth of 1.0-1.5 m (13% of the entire territory), the temperature on the soil surface on some days can reach up to +40°C. In winter, the depth of soil freezing in the south of the republic is about 60 cm, and in the north - more than 100 cm.

Average temperature: January: -17°C (in the southern part) and -20°C (in the northern part), July: +11°C (in the northern part) and +15°C (in the southern part) precipitation: from 700 mm per year. From October 1, in the city of Vorkuta, and in the Priluzsky district, at the end of the 2nd decade of October, the air temperature drops below 0°C.

Climate in Yamalo-Nenets Autonomous Okrug

The Yamalo-Nenets Autonomous Okrug is located in the arctic, subarctic and temperate zones in the northern part of the Arctic, where the Yamal, Gydansky and Kara Sea islands are located. The winter is long (more than 8 months), severe, the duration of stable frosts is 220 days. Wed January-February temperatures are -27 °C and below (absolute minimum -55 °C, Gyda). The height of the snow cover is 20–25 cm, the duration of occurrence is 240 days or more. Strong winds (up to 20–30 m/s), snowstorms (more than 100 days) are typical. Fog is not uncommon in the west of Yamal and on the islands. Summer is short (about 50 days), cold. Wed July temperature 3.4-4.5°C (max. 31°C). Cloudy weather prevails with drizzling rain. Precipitation is less than 200 mm per year. In the center and southern regions of the peninsulas (up to the Arctic Circle) the climate is subarctic. The winter is severe, the duration of stable frosts is 200–210 days. Wed January temperature is from -22 (-24) °C in the west to -26 (-27) in the east, and the absolute minimum is -57 °C Tazovsky). The height of the snow cover is 35–50 cm, the duration of occurrence is 210–220 days. Summer is cool (65–68 days). Wed July temperature 8–13 °C (absolute maximum 28 °C, Marre-Sale). Precipitation 250–280 mm per year (predominantly in the 2nd half of summer). Vegetac. period up to 44 days. In the southern part of the district, the climate is continental, the degree of its continentality increases towards the east. The winter is cold, the duration of stable frosts is 180–190 days. Wed January temperatures range from -23°C in the west to -26°C in the east (absolute minimum -61°C, Tarko-Sale). The height of the snow cover is from 60–70 cm in the mountains to 80 cm in the east (the basin of the Taz River), the duration of occurrence is 200 days. Avalanches are dangerous in the mountains. Wed July temperature 14–16 °C (absolute maximum 34 °C, Tolka). Precipitation up to 500 mm per year (mainly in August). The growing season is 110–115 days. All in. regions, continuous permafrost (thickness 300–400 m) is widespread, in the south - discontinuous; under the river beds - thawed soils.

Climate in the Krasnoyarsk Territory

Climate is a long-term weather regime characteristic of a given area due to its geographical location. By climate it is customary to understand the average value of weather over a long period of time (of the order of several decades), that is, climate is the average weather. Thus, the weather is an instantaneous state of some characteristics (temperature, humidity, atmospheric pressure).

Climatic conditions are determined by the geographical location of the area, the level of solar radiation, the circulation of air masses, and the influence of the underlying surface.

The climate of the Krasnoyarsk Territory is characterized as sharply continental, especially severe in the north. Winter is long. The average January temperature is from -30 to -36 ° C in the north and the Central Siberian Plateau and from -18 to -22 ° C in the regions of Yeniseisk, Krasnoyarsk and in the south. Summer in the central regions is moderately warm, in the south - warm. The average temperature in July is from +13 ° C in the north (on the shores of the seas less than +10 °C) to +16-18 °C in the center and up to +20 °C in the south. The duration of the frost-free period is from 73-76 days (Khatanga, Tura) to 103-120 days (Yeniseysk, Krasnoyarsk). Precipitation is predominantly summer. Their number ranges from 200-300 mm per year in the north to 400-600 mm on the Central Siberian Plateau and 800-1200 mm on the northern slopes of the mountains of Southern Siberia; in the intermountain basins of the southern part - 250-300 mm. In most of the region, especially to the north of the Lower Tunguska, permafrost is widely developed.

The deviation of the weather from the climatic norm cannot be considered as climate change, for example, a very cold winter does not indicate a cooling of the climate. To detect climate change, a significant trend in the characteristics of the atmosphere over a long period of time of the order of ten years is needed.

The global weather monitoring system is only 100 years old. Only a century ago, reliable instrumental measurements of all meteorological parameters began to be carried out according to uniform standards on the same equipment throughout the globe. In Siberia, climate research is carried out by the Central Siberian Department for Hydrometeorology and Environmental Monitoring,

which includes one and a half thousand unique specialists, 113 weather stations and 10 aerological stations, weather balloons, radars, UAZ vehicles and satellite systems. The problem of maintaining the meteorological service system in the country is now acute: funding from the federal budget is being reduced, which leads to a change in the observation program (aerological stations are transferred to one-time sounding, the number of samples taken is reduced, night observations of air pollution are removed, reduced transport costs), cut wages of workers. Under such conditions, it is difficult to ensure the safety of people's livelihoods in terms of predicting situations in nature. Over the past 20 years, this institution has recorded a steady trend in temperature increase, especially in winter in Siberia. Abnormally high temperatures in the winter of 2013 caused the following natural phenomena: willow blossoms in December; they could not sleep, the impossibility of transport communication for 30 thousand inhabitants of the Krasnoyarsk Territory (in December 2013, out of forty winter roads in the Krasnoyarsk Territory, only seven operated and not a single ice crossing). Over the past 20 years, this institution has recorded a steady trend in temperature increase, especially in winter in Siberia. Abnormally high temperatures in the winter of 2013 caused the following natural phenomena: willow blossoms in December; they could not sleep, the impossibility of transport communication for 30 thousand inhabitants of the Krasnoyarsk Territory (in December 2013, out of forty winter roads in the Krasnoyarsk Territory, only seven operated and not a single ice crossing). Over the past 20 years, this institution has recorded a steady trend in temperature increase, especially in winter in Siberia. Abnormally high temperatures in the winter of 2013 caused the following natural phenomena: willow blossoms in December; they could not sleep, the impossibility of transport communication for 30 thousand inhabitants of the Krasnoyarsk Territory (in December 2013, out of forty winter roads in the Krasnoyarsk Territory, only seven operated and not a single ice crossing).

March 2014 in Krasnoyarsk set three meteorological records at once.

The average monthly temperature in the month was 5.1 °C above the norm: instead of the expected - 6.6 °C, in fact it was - 1.5 °C. Precipitation was 20 mm at a rate of 15, that is, about 130% of the norm.

Air temperature record: on March 19, the temperature was +13.6 °C, the previous record was in 2007, when it was only +10 °C. On March 20, the temperature rose to +14.6°C, which was 6°C higher than the previous record in 1973.

The record for the beginning of a "temperature" spring: the average daily temperature steadily crossed 0 ° C already on March 13, and the previous earliest transition was in 1989, on March 22.

Scientists have not yet come to a consensus on the reasons for the change. There are suggestions that climate change is associated with human activities on Earth. For example, the presence of greenhouse gases, whose molecular size is commensurate with the size of a wave of long-wave radiation and contributes to a stronger heating of the atmosphere when heat spreads from converted solar radiation into the atmosphere, places the responsibility for climate change entirely on humans. Another point of view is that, like any physical body, the climate system, together with forced, provoked external factors, has its own or free fluctuations. The Earth has already had ice ages and periods of colossal heat, so such climate changes are natural processes.

According to Professor John Baddington, scientific adviser to the British government, we have moved from the idea of global warming to the concept of climate change. He noted that the temperature on the planet is rising, but more importantly, the weather is becoming more changeable.

According to VL Syvorotkin, the main cause of weather (and climate) anomalies is fluctuations in the total ozone content (TO) in the atmosphere. The reasons for these fluctuations are the emission of deep, ozone-destroying gases (hydrogen and methane) and geomagnetic field variations that increase the ozone concentration. Hazardous meteorological phenomena are formed in the contact zone of different sign TO anomalies – air whirlwinds, heavy rainfall, causing floods.

Climate in the Republic of Sakha (Yakutia)

The Republic of Sakha (Yakutia) is the most severe region of the northern hemisphere. At the same time, this is an amazing place, the nature of which is full of unexpected contrasts. Here, a record-breaking winter in terms of duration and low temperatures is combined with a hot summer. The Republic is part of the Far Eastern District and covers an area of more than three million square kilometers - it is the largest subject in the Russian Federation.

Climate of Yakutia (Yakutsk) by months:

Often, Yakutia is called the land of permafrost, although summer here can be very hot and dry. This is due to the sharply continental type of climate, in which there is a high temperature difference in winter and summer. So, in Yakutia it is 70-90 °C. On the territory of the republic there is the coldest point of the Northern Hemisphere - the village of Oymyakon, where a temperature record of -71.2 °C was recorded. Closer to the coast, the climate becomes less continental, the amplitude of temperature jumps decreases.

Spring

Spring comes at the beginning of May and proceeds swiftly. The snow melts quickly, ice breaks sharply on the rivers, floods come. By the middle of the month, the daily temperature reaches +5 °C, and

in the last days of May it already exceeds +20 °C. However, at night there can still be frosts - up to -10 ° C. Then summer kicks in.

Table 2. City of Yakutsk(Yakutia, Russia)

	March	April	May
Average maximum temperature	-14°C	-2°C	+11°C
Average minimum temperature	-19°C	-6°C	+4 °C
Number of sunny days	1 day	1 day	6 days
Number of snowy/rainy days	0 days	1 day	2 days
Precipitation in mm (per month)	14 mm	41 mm	56 mm

Summer

This is the most picturesque time of the year in Yakutia, which starts closer to the middle of June and lasts only 2 months. The warmest of them is July. At this time, the daily temperature can reach +35..+40°C.

The warmest place is in the central part of the republic, but on the coast and the Arctic islands the average temperature does not exceed +5°C even on the sunniest days. There are often fogs and drizzling rains.In June, a wonderful time comes - the time of white nights, when the duration of daylight hours can reach 20 hours. City of Yakutsk (Yakutia, Russia)

Table 3.

	June	July	August
Average maximum temperature	+21°C	+24°C	+20°C
Average minimum temperature	+13°C	+16°C	+13°C
Number of sunny days	10 days	12 days	11 days
number of rainy days	2 days	2 days	3 days
Precipitation in mm (per month)	32 mm	47 mm	42 mm

Autumn

Autumn in Yakutia comes in August and is characterized by rapid cooling. The average daily temperature drops below +15°C, and in September long drizzling rains begin, followed by snowfalls. By the beginning of October, almost all rivers freeze, the snow stops melting, and temperatures drop below zero throughout the region. City of Yakutsk (Yakutia, Russia)

Table 4.

	September	October	November
Average maximum temperature	+8 °C	-4°C	-23°C
Average minimum temperature	+4 °C	-7 °C	-24°C
Number of sunny days	6 days	3 days	2 days

Number of rainy/snowy days	2 days	1 day	1 day
Precipitation in mm (per month)	51 mm	37 mm	16 mm

Winter

Winter is the longest season in the Sakha Republic. In the Northern Hemisphere, Yakutia has no analogues in terms of the duration of winter. On average, it lasts from 7 to 9 months and starts in October. The combination of severe frosts and low rainfall forms permafrost. In the west of Yakutia, there is the world's thickest layer of permafrost - up to 1500 m. The average air temperature in January is -35°C. The coldest is in the regions of Oymyakon and Verkhoyansk - -50 ° C and even lower. In winter, the sun does not rise at all high, so daylight hours last no longer than 5 hours. And beyond the Arctic Circle comes the polar night - the sun in these places does not rise completely even during the day.

Winter in Yakutia has its own charm - sometimes, at night, the cloudless sky is illuminated bright flashes of northern lights. This amazing natural phenomenon is observed here more often than in other parts of the world.

Table 5. City of Yakutsk(Yakutia, Russia)

	December	**January**	**February**
Average maximum temperature	-33°C	-33°C	-29°C
Average minimum temperature	-34°C	-35°C	-32°C
Number of sunny days	4 days	4 days	2 days
Number of snowy days	0 days	0 days	0 days
Precipitation in mm (per month)	3 mm	7 mm	5 mm

Climate of the Chukotka Autonomous Okrug

The Chukotka Autonomous Okrug differs for its not very high latitudes by a very harsh climate - much more severe than in neighboring Alaska. In general, it has a monsoon-like character (especially on the Bering coast), with long winters (windy in the east and very cold in the west) and short but rather warm summers in most of the district.

The average annual temperatures throughout the entire territory of Chukotka are deeply negative, falling from south to north from -4°C to -12°C. Moreover, from east to west - from the tip of the Chukotka "wedge" into the interior of the territory - the continentality of the climate is rapidly increasing. Average temperatures in July, for example, rise from + 4°C to + 14°C, and in January they decrease from - 18°C to - 42°C. The duration of sunshine is from 1000 to 1800 hours (or 1.5-2.5 months) per year.

The Chukchi coast of one of the most stormy Bering Seas in the world is one of the most windy regions of Russia. During 5-5.5 months of the year, the wind speed in some places exceeds 15 meters per second (in the continental regions of the Okrug, such winds rage for no more than 3-5 days). But on the coasts, winds with a speed of more than 40 meters per second occur every year for several days, or even weeks. Record squalls reach 80 meters per second!

The weather in Chukotka is determined by the combination of four circulation factors of the Earth's Northern Hemisphere here at once. Therefore, it is distinguished, on the one hand, by overall good predictability, and, on the other hand, by extreme variability in space and time. The weather can change dramatically (especially on the coasts) within one or two hours and for 10-20 kilometers. Pressure drops per day can be 50 mbar, and winter temperatures - 30°C. Sudden blizzards "break down" in places even at a pressure of 780 mm (1020 mbar). Powerful fronts of breezes, fogs, etc. are observed in spring. And if we add to this such natural phenomena as frequent ice, powerful snow accumulation, prolonged winter blizzards, a constant lack of heat and a harsh wind regime, then the extreme complexity of developing this harsh polar region will become clear.

The light industry market is also growing due to sociocultural progress, in particular, thanks to the development of professional sports, an increase in demand for those who choose sport as a way to a healthy lifestyle. At the end of 2020, the Sport Express newspaper published an interview with A. Grebtsov, Chairman of the Board of the Russian Outdoor Group. “The outdoor market serves mountaineering, tourism, extreme sports, special forces, rescue units, polar services and troops. These are areas that require heavy-duty, frost-resistant, waterproof equipment that

meets the latest global standards of safety and comfort." A. Grebtsov gave interesting details, in particular, he compared the technological base for the production of quality products in the Russian Federation, Europe and Asia. We are "somewhat behind", according to him, from the Asian potential, but with Europe "We can definitely compete ... in Russia there are about 30 (!) Enterprises that can sew well." After the introduction of the import ban for state orders and state defense orders, the share of materials from the member countries of the Customs Union supplied to the country's law enforcement agencies increased from 30% in 2017 to 93% in 2022. D. Manturov believes that in order to consolidate the results achieved, it is important:

- make it clear to large retail chains the importance of acquiring and distributing goods produced in Russia, of course, taking into account their proper quality;
- to place first of all orders for production from those "who have already got on their feet and know how to sew." They were able to prove their worth;
- to assist enterprises in obtaining European certification, otherwise foreign firms will not be interested in them, and the goods produced by us will not get to the West;
- actively support enterprises in the provision of collective stands at international exhibitions;
- provide such enterprises with subsidies on loans for the purchase of raw materials and materials. The share of these loans in the total volume of lending should be from 50 to 85%;
- exempt modern imported equipment from import duties and VAT, such as equipment used in sewing shops, 90% is imported;
- implement preferential leasing.

As you can see, the program of D. Manturov systematizes the main and primary steps in the direction of the light industry in order to return it to its former meaning. However, Heraclitus was right when he said that you cannot step into the same river twice. The rise of the light industry can only be carried out on a new technological, economic and legal basis.

Never before have shoe companies found themselves in such a situation as they are now. All markets are divided into many segments. Specialization has reached such a level that one can still hide from competition only in a small space between two adjacent segments of different markets or of the same market.

When creating new enterprises for the production of footwear, these five subjects of the Southern Federal District and the North Caucasus Federal District, identified in a competitive environment, are not attractive due to the successfully developed shoe production.

As a result of segmentation, it was determined that the population of the two districts is unevenly distributed over the territory. The income of the population is much less than the average for Russia. When forming the assortment of footwear, one should also take into account the fact that a large proportion of the population is rural residents. It is also necessary to take into account the national characteristics of the inhabitants, their traditions. What is the main thing today for success in the market of many new and established firms, small, medium and large enterprises, many of which were small not so long ago, for numerous commercial structures and joint ventures? This is the ability of enterprises to provide the consumer with products of higher quality than before, and, moreover, at the same or lower price.

Modern production, or, as it is commonly called, world-class production, must meet the following requirements:

– have greater flexibility, the ability to quickly change the range of products. The life cycle of products has become shorter than ever, the diversity of the product range is higher, and the serial production, the volume of batches of one-off production, is smaller. Hence, production focused on the production of mass, standardized products (strictly complying with standards, specifications, technical conditions), which is not able to constantly adapt to the needs of real, often small groups of consumers, is now doomed to extinction;

– use new forms of control, organization and division of labor, taking into account the more complex production technology;

– rely on integrated quality management. Quality requirements not only increased, but also changed the nature of decision-making: it is not enough to produce good products, you still need to think about organizing after-sales service, about providing additional branded services to consumers who are highly individualized in their requests;

– simultaneously improve product quality and reduce costs. If before it was possible to offer the consumer a lower quality product at a lower price and, conversely, a high price always corresponded to high quality, but today the situation has changed. Higher quality of the product should be provided at the expense of the same lower price.

Now in our country there is a situation where most of the population has a very modest income, and it is she who is a potential buyer of mass-produced products.

The light industry market is an integral element of economic relations, the main participants of which are, on the one hand, manufacturers, and on the other, consumers. Light industry products, which are one of the most complex groups of non-food products with a very diverse assortment, act as goods on this market.

Thus, the value of the market for light industry products is to meet the needs of the population. Accordingly, the development of the market leads to an increase in the level of security of an individual member of society. Markets are made up of buyers,

and buyers differ from each other in a variety of ways: by their needs, financial and other opportunities, location, buying attitudes and buying habits. In market segmentation, businesses subdivide large heterogeneous markets into smaller (and more homogeneous) segments that can be served more efficiently, according to the specific needs of these segments. In order to successfully sell their products, manufacturers first of all need to segment the consumer market and determine the target segment of this market.

In a general sense, market segmentation is understood as the process of dividing the market into groups of consumers according to predetermined characteristics, which allows you to concentrate funds on the most effective. A market segment is a homogeneous set of consumers who react in the same way to a product and how it is presented.

Target segment (market) - a segment selected as a result of a study of the sales market of a particular product or service, characterized by minimal costs for the means of promoting the product and providing the enterprise with the main share of the result of its activities (profit or other criteria for the enterprise to enter this market).

Segmentation of the light industry market in the Southern Federal District and the North Caucasus Federal District can be carried out both on the basis of one and with the consistent use of several indicators clearly presented in the diagram (Table 2).

Results of segmentation of the analyzed basic market of light industry productsfor the regions of the Arctic zone of the Russian Federation can be presented in the form of table 2 ratings. The segment with the minimum number of seats in the end is the highest priority.

Table 6.

Criteria for segmenting the market for light industry products for the regions of the Arctic Zone of the Russian Federation

Segmentation subject	Segmentation object	Segmentation by population	Segmentation by income level	Segmentation by average salary
All enterprises producing or intending to produce light industry products for the regions of the RF AZ	Regions of the Arctic Zone of the Russian Federation	The larger the population of the segment, the more profitable for the enterprise	The higher the profitability of each resident of the regions of the Russian Arctic, the greater the chance to purchase light industry products	The higher the salary of a resident, the greater the chance that he will spend it on the purchase of light industry products

As a result of the analysis of Table 2, two regions and three regions were identified where the greatest segmentation of the consumer market from the regions of the Russian Arctic is observed: the Republic of Sakha (Yakutia) - 2.15%, Chukotka Autonomous Okrug - 2.65%, Krasnoyarsk Territory - 2.7%, Yamalo - Nenets Autonomous Okrug - 3.25%, Nenets Autonomous Okrug - 5.4%. However, when conducting segmentation, it is necessary to take into account the goals of segmentation. As a result of segmentation, it was determined that the population of the regions of the Arctic Zone of the Russian Federation is unevenly distributed over the territories. The income of the population is much less than the average for Russia. When forming light industry products, one should take into account the fact that a large proportion of the population is rural residents. It is also necessary to take into account the national characteristics of the inhabitants, their traditions. When organizing the marketing of manufactured light industry products, one should take into account

The correct definition of quality, consistency and systematic quality management gives the manufacturer a decisive advantage in the competition for the consumer. It would seem that everything is simple, but simplicity is equally ingenious and deceptive. The general plan for solving the problem determines the vector of movement, sets the factorial priorities of the activity - nothing more.

The product produced by man is dual in nature, it combines the natural properties of raw materials and the features introduced into it by human labor. A product has a rental value and an added value. In this context, it is not the cost that is important - it serves as a quantitative equivalent of the quality of the goods in general, but the result of labor - in the form of a transformation of the natural state of the object. The product of human activity has a natural, basic, level and a superstructural, introduced one. Hence the need for a dualistic perception of the quality of the product, which should not be interpreted primitively as a double quality. The quality of the commodity is one, but the production duality of the product is associated with it.

Such a two-sided quality of the goods misleads those who, without understanding the art of dialectical

thinking, seek to put everything “on the shelves”, forgetting about the structure of which these shelves are parts. The quality of the goods is only determined by a natural basis, but it is built artificially.

The quality of goods has several creators. This is a fashion designer, designer, technologist, manager; their qualifications, experience is measured without problems. Others are also within reach, only their measurement is difficult, especially when it comes to the consumer.

The economic situation affects both producers and consumers, shakes the market on the waves of its uneven movement, and along with purchasing power, the idea of quality.

Outwardly, the definition of the quality of a product produced for sale on the market seems to be an impossible task, because for this it is necessary to combine not converging, but (mostly) diverging views. Involuntarily, Krylov's Fish, Cancer and Pike, who undertook to drag the cart, are recalled. In our case, there are even more subjects.

The designer, technologist, manager (they can be combined) develop their understanding of the quality of the goods, they are connected by the common interest of the manufacturer. The buyer has a special approach to quality. As a consumer, he is not sure about the integrity of the manufacturer. In addition, the buyer has his own tastes, reasons, due to the real buying opportunity. There are also the interests of the market, which has turned it into an independent object. By controlling the market, the intermediary - the speculator - is able to form an image of quality in his own interests, in particular, through advertising, the provision of priorities, etc. Finally, there is the quality of the product itself, expressed in the totality of properties of natural origin and added by the manufacturer. As a result, we came to the “quality square”, which combines the qualities of the product and the image of quality.

The most serious contradiction, apparently, remains the divergence in the images of the quality of the product by the manufacturer and the consumer. The special importance of a different approach to the quality of the manufacturer and consumer is natural. They are the main subjects of the system of economic relations, they have a common goal - the product. The former produce it, the latter consume it, but they have different motives due to different positions in the system and the culture of perceiving the goal.

The manufacturer creates a product, but not the product - the ultimate goal of the manufacturer, but the realization of the product. The direct connection between the producer and the consumer is therefore local, which negatively affects the producer. The seller blocks the consumer from the manufacturer, and the manufacturer is forced to focus not on the market, but on the market situation, most often artificially formed by the speculator and advertising - questions of prices, cost and profitability. But one thing is true: it is a constant evaluation and revision of the entire range.

And most importantly, once again I would like to emphasize that all this will become a reality if one main condition is met, namely, if domestic products are produced of high quality and taking into account the interests of this very consumer.

As an object of study, the criteria for a reasonable choice of a package of materials in the production of a suit for special employees of the regions of the Arctic. At the same time, preferences will be specified that would guarantee them comfortable conditions in the performance of their official duties.

The environment for a person in clothes and shoes is air, hard ground or snow and water. Individual areas of the human foot may be in contact with any of these media. In cold conditions, with the difference between the temperatures of the human body and the environment, there is a continuous heat exchange, the transfer of thermal energy from the human body to the environment. Under rapidly changing environmental conditions and the regime of physical activity, it is almost impossible to maintain a state of thermal balance. The process of cooling the feet is accompanied by the appearance of various uncomfortable sensations in the wearers of the shoes.

The development of mathematical models of the "man-suit-environment" system, which makes it possible to create algorithms for calculating the initial parameters for personal protective equipment for a person, is an urgent and direct task of mathematical modeling as part of the development of personal protective equipment for a person located in climatic zones with elevated temperatures.

Figures approximating the human body are considered as systems with distributed or lumped parameters. When approximating the body with one cylinder, one can speak only of an approximate reproduction of the thermal regime of a person. A rough approximation is provided by models in which the thermal conductivity, heat production and heat loss of body tissues are taken constant over the entire thickness of the cylinder or layer. Most authors do not take into account the system of human physiological thermoregulation. They consider a person in comfortable conditions, when the mechanisms of thermoregulation are inactive. Our studies take into account the thermoregulation system.

Figure 7. A)

Figure 7. b)

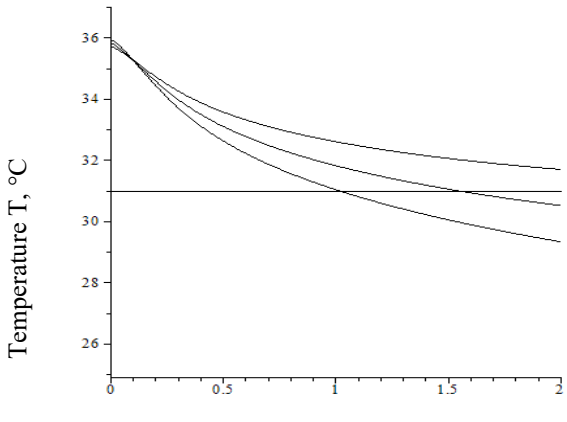
Figure 7. - set: a - suit set for a territory with moderately low temperatures (Republic of Karelia), b - suit set for a territory with very low temperatures (Chukotka Autonomous Okrug)

Software for substantiating the choice of packages of materials for clothing and footwear in the formation of comfortable conditions for a person who is in climatic zones with a low temperature, due to the control over the decrease in temperature inside the costume space to 21 C0 for the foot and to 31 C0 for the human body, which were laid into the developed software with a reasonable choice of a package of materials, taking into account their thermophysical characteristics.

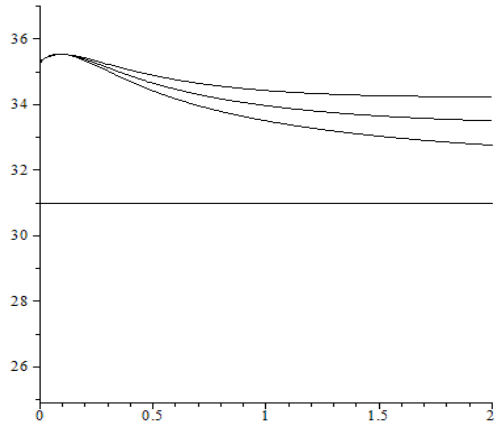
The software developed by the authors solves this problem and creates the prerequisites for a reasonable choice of a package of materials based on the obtained thermophysical characteristics on stands and devices, therefore, the availability of modern tools for determining the thermophysical characteristics and packages of materials and the developed software guarantees manufacturers to manufacture a suit with a high degree of reliability, which creates comfortable conditions during the entire time they perform their official duties. The entire list of works offered to the reader should not mislead him that there is no need for experimental wear. Of course not. Experienced wear in real conditions confirms the validity of the conclusions drawn or rejects them. But the availability of highly efficient methods for studying the thermophysical properties of materials and software for a reasonable choice of packages of materials significantly reduces the cost of developing and manufacturing workwear for workers in conditions with low temperatures. But what is still very important, the formation of requirements for materials on the possibility of their use for the production of workwear is also in demand by the developers of the materials themselves, including those using nanotechnologies, and all this together will solve the problem of protecting the population of the Russian Arctic regions from the impact of external negative influences on them. conditions.

As an object of study, the criteria for a reasonable choice of a package of materials in the production of a suit for the regions of the Arctic were chosen. At the same time, preferences will be specified that would guarantee them comfortable conditions in the performance of their official duties.

Model 1 without additional gasket



Model 1 with extra paddingTKPM AKR-622\AKR218



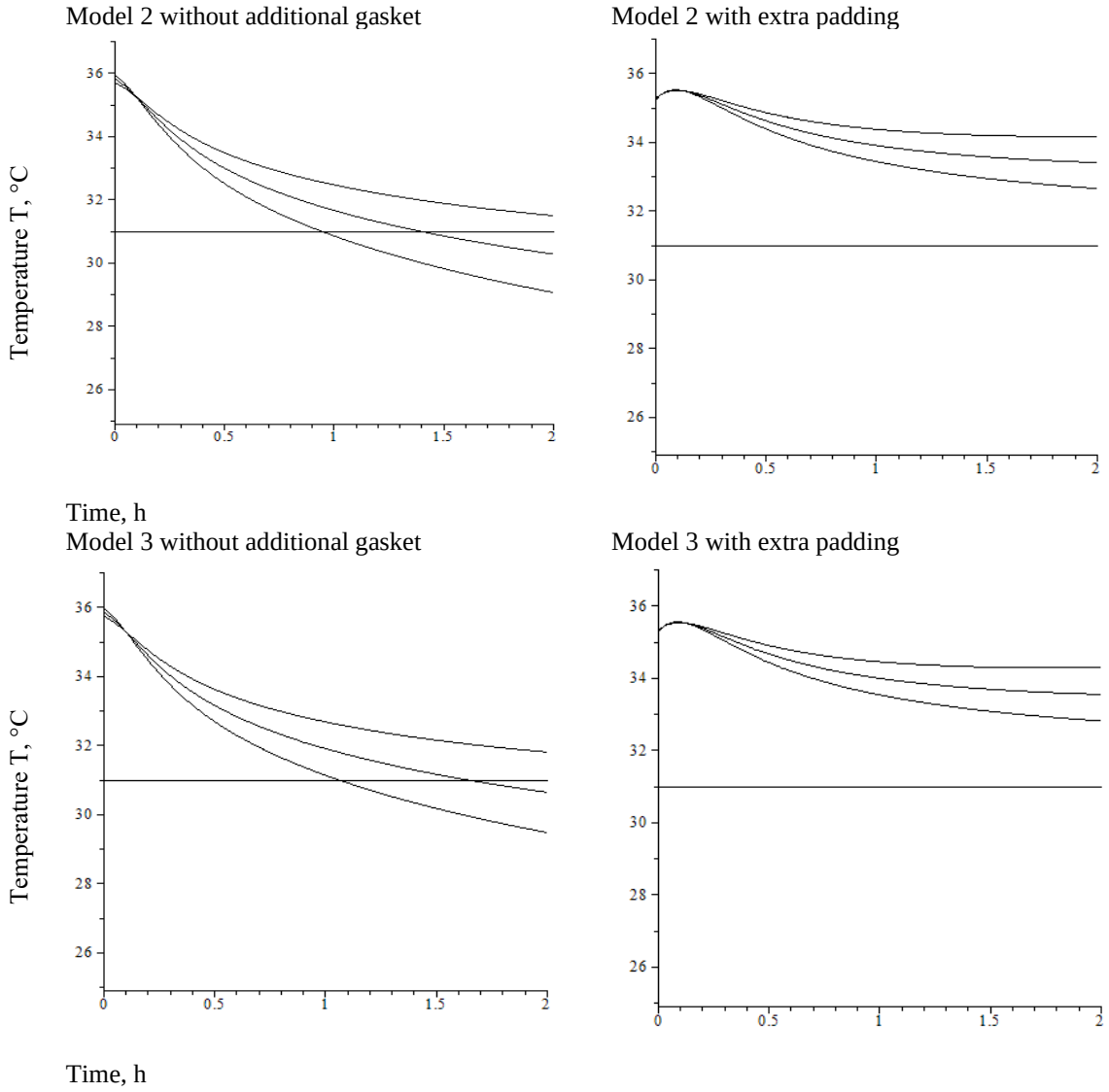
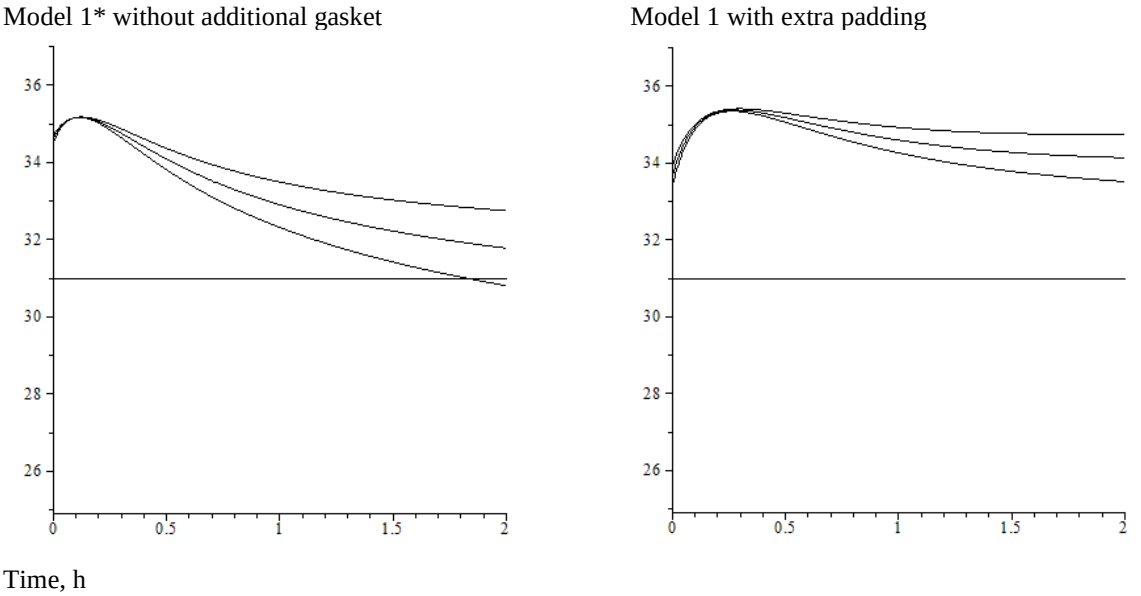
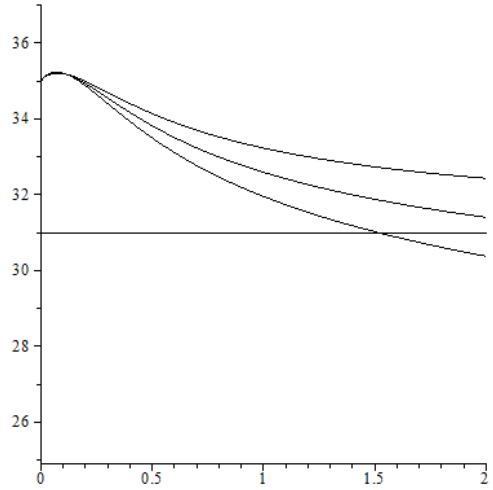


Figure 8 - The results of calculations of the average weighted skin temperature for packages consisting of imported materials at ambient temperatures: curve 1 - 20°C, curve 2 - 30°C, curve 3 - 40°C.

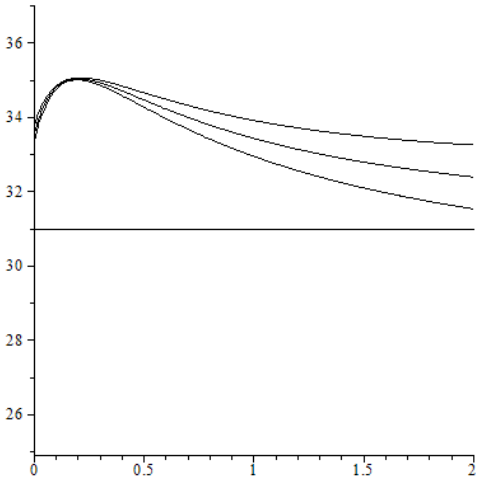


Model 2* without additional gasket



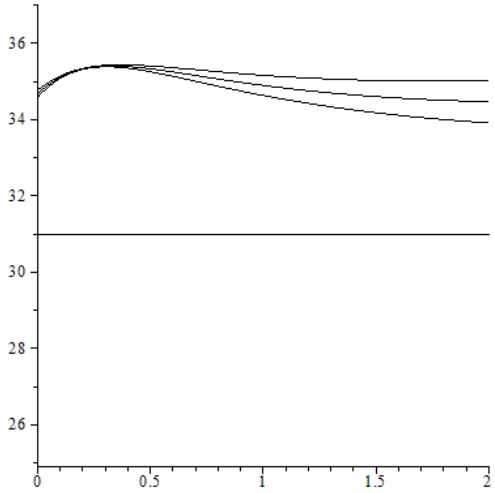
Time, h

Model 3* without additional gasket



Time, h

Model 3 with extra gasket



Time, h

Figure 9 - The results of calculations of the average weighted skin temperature for packages consisting of materials of domestic production at ambient temperatures: curve 1 -20°C, curve 2 - 30°C, curve 3 - 40°C.

If for a suit the software developed by the authors makes it possible to formulate requirements for a package of materials and provide a comfortable state for a person to perform their duties, then for the face, hand, for the big toe, it guarantees comfortable conditions without additional research on the choice of packages of materials. . Characteristics of glove materials that would be justified are shown in Table 6.

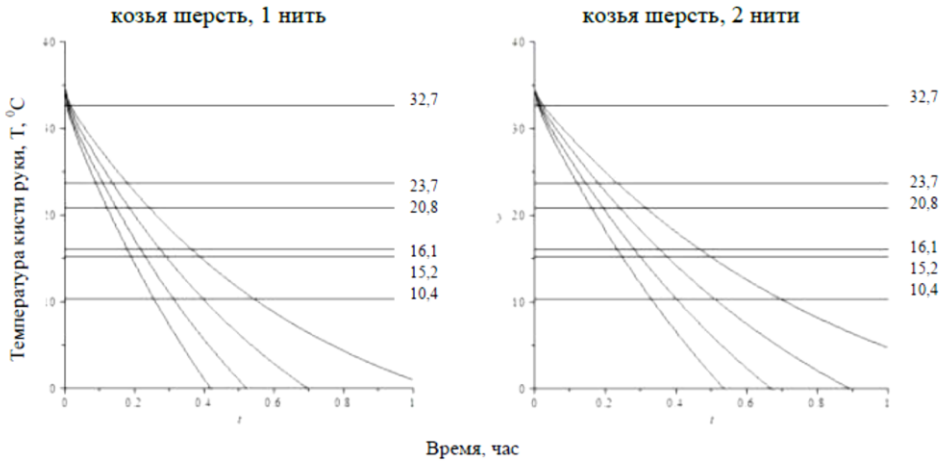
Features of the choice of materials for human gloves for the regions of the Arctic are provoked by the climatic conditions of this zone in order to guarantee them comfortable conditions during the entire time they use their official duties. At the same time, special attention was paid to ensuring the comfort of not only the human hand. Possibilities of using nanomaterials that are able to carry out thermal regulation and provide the skin of the hand with a comfortable temperature, namely, not lower than 32 °C. Such studies are possible using the same software that the authors developed and used for materials, the characteristics of which are given in Table 6.

Table 6. Characteristics of materials in the manufacture of gloves for humans for the regions of the Arctic

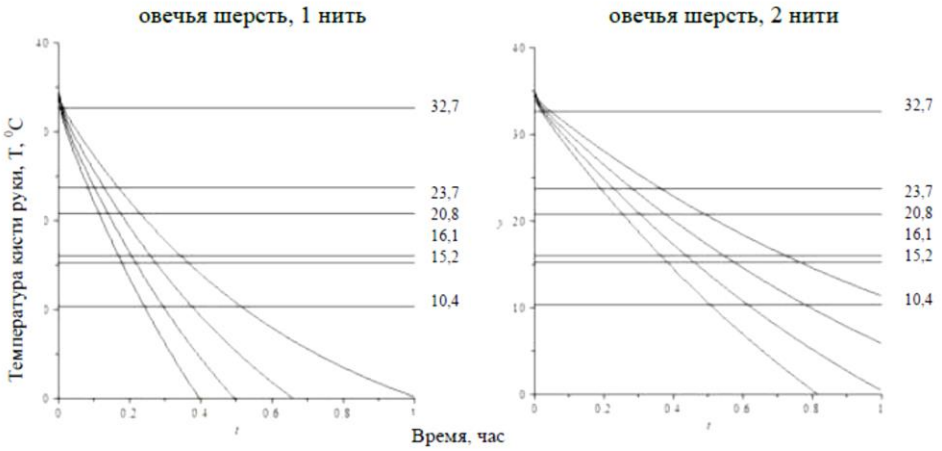
Materials used to make gloves	Thickness, mm	Coefficient of thermal conductivity, λ, W/ m° C
1 Yarn from one thread:		

1.1 Goat wool	0.7	0.015
1.2 Sheep wool	0.8	0.020
1.3 Camel	0.9	0.005
1.4 From dog hair	0.8	0.010
2. Two-strand yarn:		
2.1 Goat hair	1.4	0.015
2.2 Sheep wool	1.6	0.020
2.3 Camel	1.8	0.005
2.4 From dog hair	1.6	0.010
3. A package of materials for the index finger of the hand, suede + yarn from one thread		
3.1 when using goat hair	1.7	0.02/0.015
3.2 when using sheep's wool	1.8	0.02/0.020
3.3 when using camel hair	1.9	0.02/0.005
3.4 when using dog hair	1.8	0.02/0.010
4. A package of materials for the index finger of the hand, suede + two-strand yarn		
4.1 when using goat hair	2.4	0.02/0.015
4.2 when using sheep's wool	2.6	0.02/0.020
4.3 when using camel wool	2.8	0.02/0.005
4.4 when using dog hair	2.6	0.02/0.010
5 Material for the fingertip of the index finger of the soldier's hand - "genuine suede leather" and for mitts	0.8	0.020

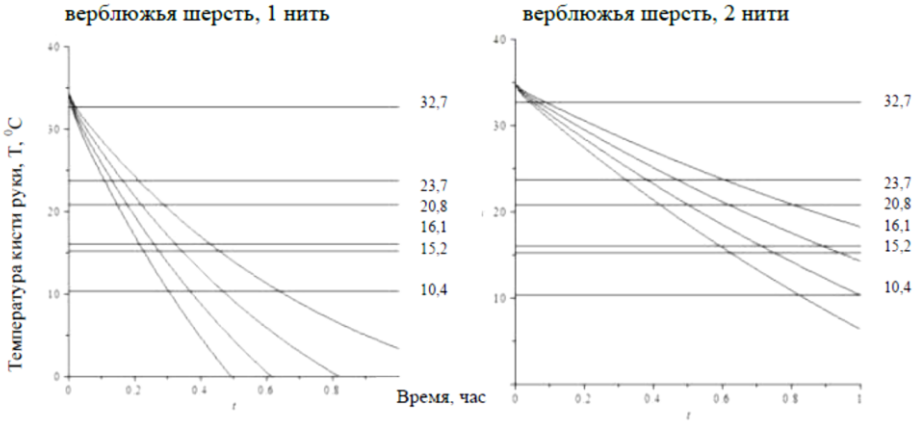
Using the software developed by the authors, graphs were constructed characterizing the condition of the skin of the human hand for four ambient temperatures, namely: Figure 11 shows the temperature values of the skin of the hand, characterizing various human warm sensations, namely, comfort 32.7 °C, slightly cool 23.7 °C, cool 20.8 °C, cold 16.1 °C, very cold 15.2°C, pain 10.4°C (frostbite). At -10°C, a comfortable state is provided only by a package of suede + dog hair (double thread), and for -20°C, -30°C, -40°C none of the studied materials and their packages together with natural fur "winter" do not guarantee a person comfortable conditions.



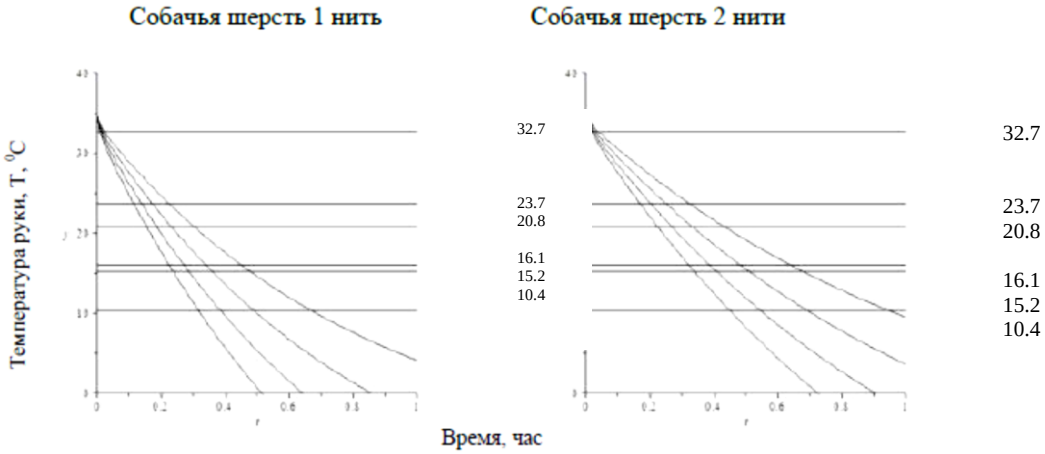
a) Change in the temperature of the skin of the hand when using goat wool yarn from 1 thread and 2 threads for gloves



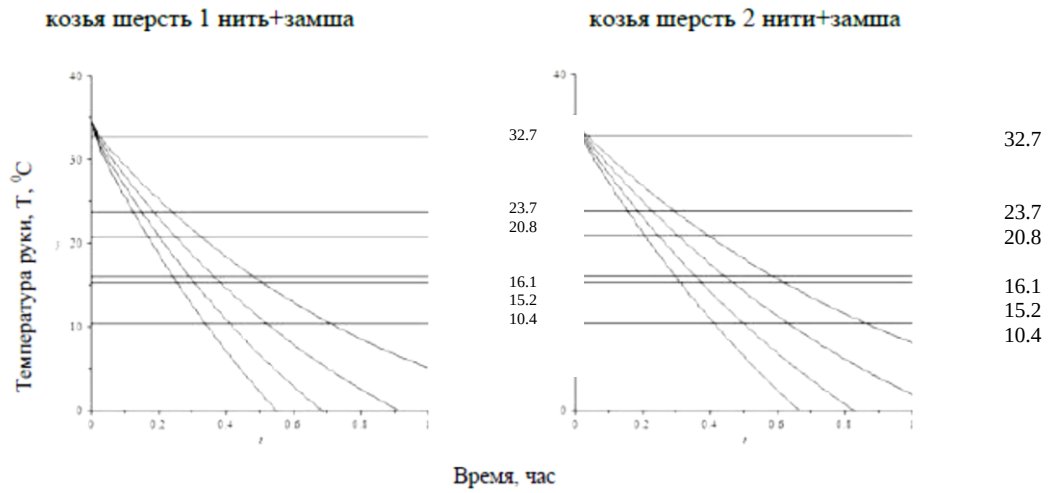
b) Change in the temperature of the skin of the hand when using yarn from sheep wool for gloves from 1 thread and 2 threads



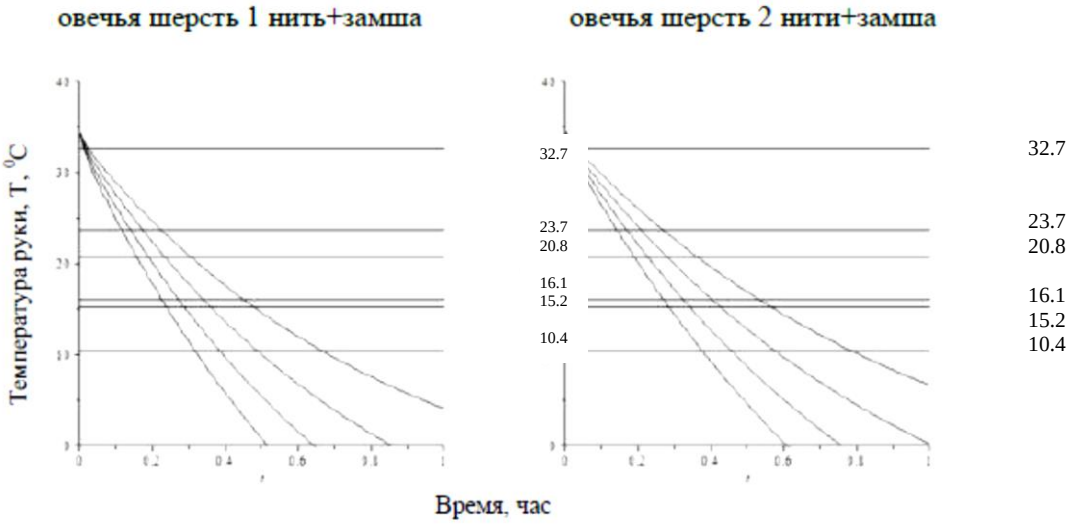
c) Change in the temperature of the skin of the hand when using camel wool yarn from 1 thread and 2 threads for gloves



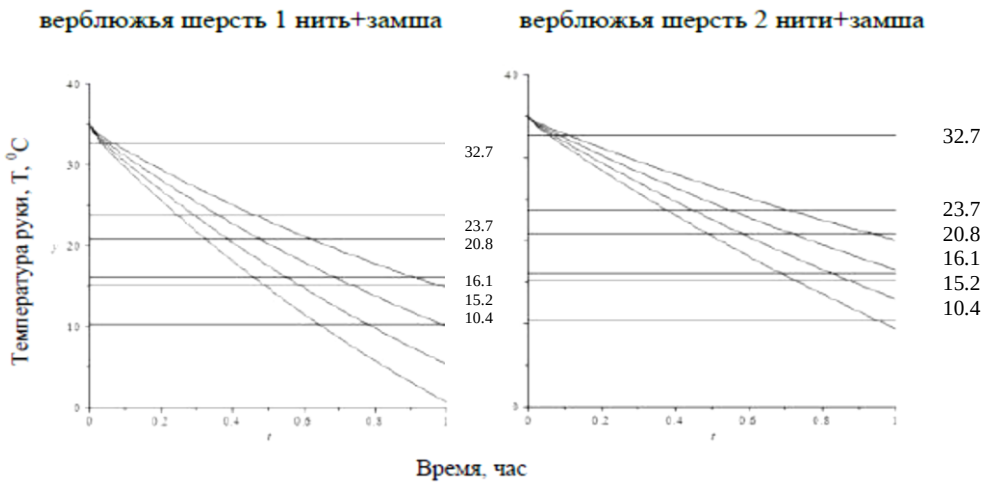
d) Change in the temperature of the skin of the hand when using yarn from dog wool for gloves from 1 thread and 2 threads



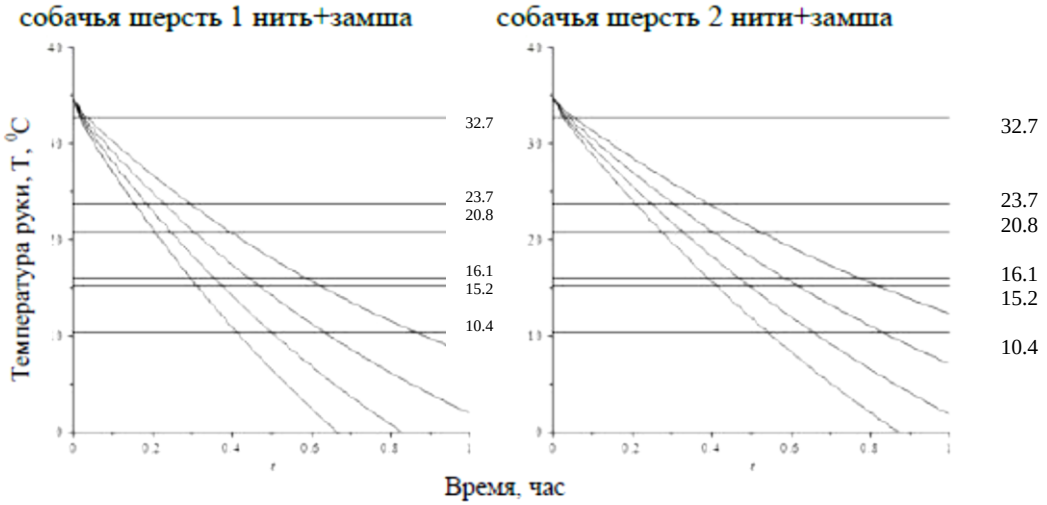
e) Change in the temperature of the skin of the hand when using goat wool yarn for gloves from 1 thread + suede and 2 threads + suede



f) Change in the temperature of the skin of the hand when using yarn from sheep wool for gloves from 1 thread + suede and 2 threads + suede



g) Change in the temperature of the skin of the hand when using camel wool yarn for gloves from 1 thread + suede and 2 threads + suede



h) Change in the temperature of the skin of the hand when using yarn from dog wool for gloves from 1 thread + suede and 2 threads + suede

Figure 11 - Characteristics of the state of comfort of the hand (skin) spec. employee when he is in different climatic conditions: curve 1 - at -10°C, curve 2 - at -20°C, curve 3 - at -30°C, curve 4 - at -40°C

Consequently, the results obtained substantiated the high efficiency of using software for the reasonable selection of packages of materials for gloves and other suit sets for a person for the regions of the Arctic, which would provide them with a comfortable state in a given temperature regime for at least one hour.

For the packages and materials shown in Table 6, curves were constructed that characterize the state of comfort of the human hand for the following ambient temperatures, namely, curve 1 - at -10°C, curve 2 - at -20°C, curve 3 - at -30°C, curve 4 – at -40°C (Figure 11).

The software developed by the authors allows the manufacturer to have a tool for an informed decision on the choice of material packages for a human suit for the regions of the Arctic, including the production of gloves to protect the hand from exposure to low temperatures in the performance of their duties.

Confirmation of these conclusions is the analysis of the properties of the most effective in terms of comfortable conditions for the skin of the hand, carried out by the authors, providing a constant temperature within 32.5°C.

The use of mittens to protect the hand also does not guarantee a person's protection from exposure to low temperatures, suggesting the search for such materials and the formation of bags from them for the manufacture of gloves that would provide them with comfortable conditions, which is possible when using nanomaterials capable of carrying out thermal control within the limits, allowing a person to perform his official duties within the required time period.

Cold is one of the harmful environmental factors affecting a person. Reactions to exposure to cold can be both functional and pathological in nature: illness, injury, death.

At low temperatures, a person may experience cold stress. The cause of cold stress can be the cooling of the body as a whole or part of it, most often the face and respiratory organs, hands, feet. At the same time, different types of cold stress are formed due to a combination of climatic factors, physical activity, clothing, etc. The main types of cold stress are:

- cooling of the whole body;
- cooling of the extremities;
- skin cooling (convective);
- skin cooling (conductive);
- respiratory cooling.

The combinations of climatic factors are as follows:

- air temperature, average radiation temperature, air mobility, physical activity, relative humidity of air, clothing;
- air temperature, air mobility;
- clothing surface temperature;
- air temperature, physical activity.

The effect of cold stress on a person is determined by the intensity of cold stress (tissue cooling). The result of extreme intensity of cold stress is hypothermia. The results of the intensity of stress from cold I degree will be:

- local damage from cold - frostbite, numbness;
- cold damage without freezing;
- pain;
- functional damage;
- acute cardiorespiratory effect;
- deterioration in performance;

- discomfort;
- heat balance.

Discomfort can cause a decrease in activity, especially in relation to solving problems associated with neuro-emotional stress, with the need to concentrate, and also increase the risk of occupational accidents and injuries. Moreover, tissue cooling can lead to reduced physical activity, which increases the risk of accidents.

Cooling of a person, both general and local (especially of the hands), contributes to a change in his motor activity, disrupts coordination and the ability to perform precise operations, causes the development of inhibitory processes in the cerebral cortex, which can cause injuries. With local cooling of the hands, the accuracy of the combat mission is reduced; activity decreases by 1.5% for each degree of decrease in temperature of the fingers.

A drop in body temperature, muscle and skin temperature leads to a decrease in the ability to perform physical work due to a decrease in the level of metabolism.

These changes reduce coordination and can lead to an increase in accidents, especially when performing a combat mission in the cold. The sensitivity of the receptors also changes with a decrease in skin temperature. So, at a skin temperature of 20 ° C, it is 1/7 of normal.The above means that a set of heat-protective clothing intended for work in an open area, in particular, in climatic regions IA and I B ("special" and IV climatic zones), must include face and respiratory protection.

Hands and feet play an important role in thermoregulation, being specific heat exchangers of the body with the environment. The state of thermal comfort is provided at a temperature of the skin of the feet 29-31°C and a heat flux of 52-87 W/m^2. The thermal resistance of tissues remains within the limits of up to 0.3 clo.

Studies by a number of authors have shown that with an increase in the thermal insulation of footwear, the weighted average temperature of human skin increases (from 32.0 ± 0.30 to 33.5 ± 0.32 ° C) and the weighted average heat flux decreases (from 90.3 ± 4.0 to 57.0±0.32 W/m^2 (≈ 40%)). The reduction in total heat loss as a result of increasing the thermal insulation of shoes can be 17.1°C. Heat loss by convection and radiation from the surface of various parts of the human body during its cooling:

a) Head 19.0 W (12%);
b) Arms 44.4W (31%);
c) Torso 36.0 W (25%);
d) Legs 49.0 W (32%);
e) Whole person 148.4 W (100%).

The amount of thermal insulation of shoes can have a significant impact on the overall heat loss of a person and body surface temperature. This means that when developing thermal protective clothing, the requirements for thermal insulation of all areas of the body should be met. With an increase in the thickness of the package of materials for insulating clothing, practically only the temperature of the skin of those areas of the body that are protected (torso, shoulder, thigh) increases. There is only a slight increase in skin temperature in the area of the hands. The change in temperature depending on the degree of warming of the surface of the body is practically not observed. There is a certain relationship between the general thermal state of the body and the degree of cooling of a particular area of the body, in particular, the feet and hands. In the same time,

The creation of heat-protective clothing for operation in the conditions of the Arctic regions should be based on a scientific principle that takes into account the physiology of heat exchange between a person and the environment. Requirements for materials and constructionthermal protective clothing in the conditions of the regions of the Arctic:

- the heat-shielding ability of clothing to protect against cooling is determined by the thermophysical parameters of the package of materials from which it is made, design, type (jacket, jacket and trousers, overalls, etc.);
- The heat-protective clothing material package is formed from the base material, the insulating pad and the lining. If necessary, to reduce the air permeability of the package of clothing materials, a windproof pad can be used, which should be placed between the base material and the insulation pad;
- the main material (integumentary, outer layer) determines the appearance of clothing and performs protective functions. It must have protective properties corresponding to the conditions of activity, be resistant to mechanical stress, precipitation, exposure to light, various types of pollutants, and be easy to clean from pollution. It must be able to conduct moisture from the underwear to the environment and have breathability adequate to the wind speed.

The paper considers the process of cooling the surface tissues of the human knee and elbow when exposed to low temperatures (Table 8).

Table 8. Characteristics of the package of materials for the protection of the elbow and knee joints

Model	Package materials	Thickness, mm	Coefficient of thermal conductivityλ,W/m ºC
1	2	3	5
Model 1	cotton linen	0.9	0.044
	Wool sweater or pants	2.4	0.027
	Nylon lining	1.6	0.042
	Thinsulate insulation (1 layer)	6.0	0.044
	Arctic-tech - outer layer (85% PE + 15% cotton)	1.8	0.041
	Arctic-tech (knee or elbow pad)	1.8	0.041
Model 2	thermal underwear	1.76	0.039
	Wool sweater or pants	2.4	0.027
	Nylon lining	1.6	0.042
	Thinsulate insulation (21 layers)	12	0.036
	Arctic-tech - outer layer	1.8	0.041
	Foam rubber - damper	2.2	0.027
	Arctic-tech (patch pocket)	1.8	0.041

For the description, a mathematical model is built in the form of a boundary value problem:

$$\frac{\partial T_i}{\partial t} = a_i\left(\frac{\partial^2 T_i}{\partial r_i^2} + \frac{2}{r_i}\frac{\partial T_i}{\partial r_i}\right) + \frac{q_{iv}}{c_i\rho_i},$$

$$i = 1,2,\dots n,$$

$$T_1(0,t) \neq \infty;$$

$$\lambda_n \frac{\partial T_n}{\partial r_n}(R_n,t) + \alpha(T_n(R_n,t) - T_c) = 0;$$

$$T_{i-1}(R_{i-1},t) = T_i(R_{i-1},t);$$

$$\lambda_{i-1}\frac{\partial T_{i-1}}{\partial r_{i-1}}(R_{i-1},t) = \lambda_i \frac{\partial T_i}{\partial r_i}(R_{i-1},t),$$

$$i = 2,\dots n.$$

Initial conditions, where$T_i(r_i,0) = f_i(r_i)t -$ time; − temperature of the i-th layer; $T_i\, i = 1,\dots n;$ − ambient temperature; is the heat capacity coefficient of the i-th layer; − coefficient of thermal diffusivity of the i-th layer; is the density of the i-th layer; − coefficient of thermal conductivity of the i-th layer; volume density of the heat flux of the i-th layer; heat transfer coefficient from the surface of the skin or protective layer (hair, hat); $T_C c_i a_i \rho_i \lambda_i\, q_{iv} - \alpha -$ $f_i(r_i)$ – initial temperature of the i-th layer.

The solution of the problem is in the following form

$$T_i(r_i,t) = \sum_{k=1}^{\infty} D_k(t) X_{k,i}(r_i),$$

Where

$$X_{k,i}(r_i) = \frac{1}{r_i}\left(A_i \sin\left(\frac{\mu_k r_i}{\sqrt{a_i}}\right) + B_i \cos\left(\frac{\mu_k r_i}{\sqrt{a_i}}\right)\right)$$

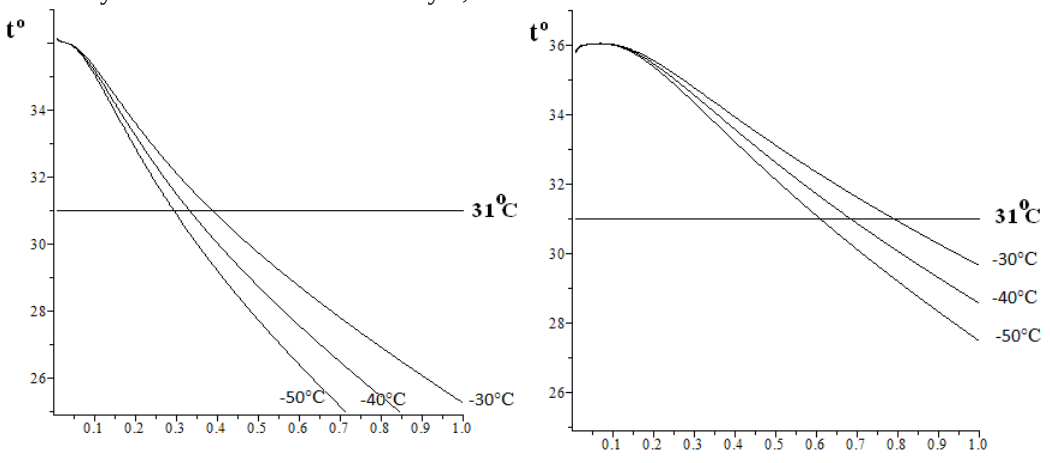
eigenfunctions of the corresponding boundary value problem:

$$\frac{\partial^2 X_i}{\partial r_i^2} + \frac{2}{r_i}\frac{\partial X_i}{\partial r_i} + \frac{\mu^2}{a_i}X_i = 0,$$

$$X_1(0,t) \neq \infty; \lambda_n \frac{\partial X_n}{\partial r_n}(R_n) + \alpha X_n(R_n) = 0;$$

$$X_{i-1}(R_{i-1}) = X_i(R_{i-1});$$

$$\lambda_{i-1}\frac{\partial X_{i-1}}{\partial r_{i-1}}(R_{i-1}) = \lambda_i \frac{\partial X_i}{\partial r_i}(R_{i-1}).$$



a) b)

Figure 13 - knee: a) model 1; b) model 2

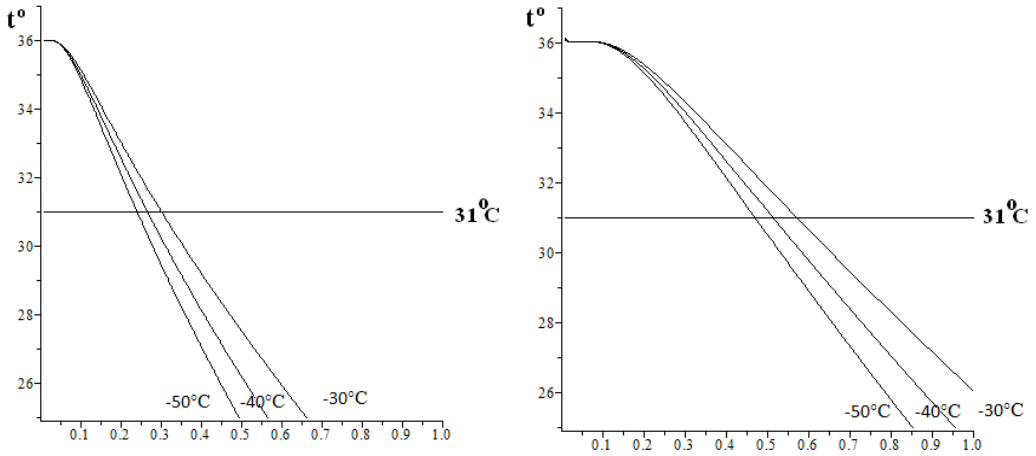


Figure 14 - Elbow: a) model 1; b) model 2

The presented results of research on the reasonable choice of packages of materials for knee and elbow overlays in order to ensure human comfort for the regions of the Arctic during the entire time of his stay in climatic zones with low temperatures using the approbation of the software product confirmed its high efficiency to ensure human comfort for the regions of the Arctic.

To some extent, the error of scientific searches in the labyrinth of dialectical thinking is also connected with the fact that philosophers who do not understand the significance of the study of spatial movement are weakly included in the process. "Spatial thinking" is the concept of a worldview scale. Moreover, this concept is system-forming in the worldview, since it is it that serves as the most important factor in the implementation of the movement of matter. One can only understand the scale of the worldview status of spatial movement in different ways: consider it exclusively material in nature, limiting it to the sphere of matter itself, selectively assessing the presence of spatial movement in properties, for example, the possibility of presence in the movement of thinking, or only in cognition, taking into account that the reflection is subject dependent. knowledge movement, as a process of production of the beginning of the movement of knowledge as self-movement, no doubt due to spatial movement. We connect the substantiation of this conclusion with the development of the concept of "movement" within its dialectical-materialistic interpretation, confirmed by numerous discoveries and misconceptions of modern natural science, as well as the practice of human life in all its forms. “Movement” is the next most important concept after “substance” in the construction of a worldview. "Substance" determines the nature of "being", "movement" shows the mode of existence of "being". F. Engels in his "Dialectics of Nature", characterizing the movement, noted: "Movement, considered in the most general sense of the word, i.e. understood as a way of existence of matter, as an inherent attribute of matter, embraces all the changes and processes taking place in the universe, starting from simple movement and ending with thinking. In the preparatory works for Anti-Dühring, F. Engels specifies the characteristics of motion: “Motion is a way of existence of matter, therefore, something more than just its property. Matter does not exist and never could exist without motion.

It is expedient to build a classification of spatial thinking taking into account the universality of movement and its qualitative diversity, represented by the forms of the movement of matter. The following types are distinguished in the basic classification:

- physical,
- mechanical,
- chemical,
- biological,
- social.

Separately, it is expedient to single out "informational".

In our understanding, the history of the social part of spatial thinking is divided into 3 stages:

Stage 1: ensuring the evolutionary viability of the type (competitiveness) of the way of moving the means of transportation the instrument of fixing (means of construction) of places of residence;

Stage 2: ensuring the development of the community (the formation and development of a national organization) in national forms: a communication tool a means of competition a way to ensure community management a factor in the formation of intersubjective formations and the formation of a national form of community an instrument for creating empires;

Stage 3: ensuring social progress in the context of modernization associated with the Industrial Revolution (modern) the emergence and development of mass technical transport, the development of technically produced energy, the diversification of technical transport, the activation of the cognitive and

cultural functions of transport. In more detail, the history of social spatial movement can be qualified as follows:

• undifferentiated transport, when the vehicle was the person himself

• mechanical natural stage;

• stage of connection of technical transport with technically received energy; • cosmic near, limited by the solar system;

• outer space - transsystem, galactic

The inclusion of spatial movement in the systemic understanding of movement should not be qualified as a desire to revise the traditional interpretation of transport. In the traditional understanding, as well as unusual for the widespread interpretation, found among British specialists, spatial movement is determined at the level of representation, reduced to its particular manifestations in the social form of movement. The lack of universal understanding hinders the scientific approach to cognition. This, in our opinion, is also connected with the uncertainty of the status of transport science, which allows the recognition of the reality of transport science and its conditional reality - phantomness. Transport science is born in the bowels of the next, post-non-classical stage in the development of science. To make her self-determined and without this, its status will remain as before a "scientific secret", general scientific support and complicity of philosophical reflection are needed. The birth of transport science does not rest on particular subject certainty, it requires more thorough and innovative methodological support with imperatives.

The integration of economic science is realized unilaterally, it loses its specific methodological base, borrowing mathematical methods of analysis. They are certainly fruitful and no one doubts their effectiveness, however, the movement of economic science, in addition to the “quantitative” coast, also has a political one, on which the qualitative guidelines of the movement, regulated by world outlook, are built. Not transport should be subordinated to the development of the economy, but the economy should be developed on the basis of the modern understanding of transport as a system-forming factor in the movement of the world in general and social progress in particular. The history of man as a biological species and social form of human reality indicates that evolution was carried out thanks to the development of living space by mankind, moving first in physical space, and, as the formation of their own social space, and in it. Civilization is the product of this process. In the new millennium, the significance of space for improving human life is even more relevant, therefore, no matter how high the value of social space is, it is necessary to go beyond this form and consider the problem of spatial exploration of the world with the help of spatial movement, understood in a broad ideological context, as a priority in the policy of ensuring comfort. Figure 15 shows a variant of the formation of a suit to protect against the effects of low temperatures on the body. This decision was provoked by the need to develop suit sets that guarantee the population comfortable conditions for various climatic zones of the Russian Arctic. Civilization is the product of this process. In the new millennium, the significance of space for improving human life is even more relevant, therefore, no matter how high the value of social space is, it is necessary to go beyond this form and consider the problem of spatial exploration of the world with the help of spatial movement, understood in a broad ideological context, as a priority in the policy of ensuring comfort. Figure 15 shows a variant of the formation of a suit to protect against the effects of low temperatures on the body. This decision was provoked by the need to develop suit sets that guarantee the population comfortable conditions for various climatic zones of the Russian Arctic. Civilization is the product of this process. In the new millennium, the significance of space for improving human life is even more relevant, therefore, no matter how high the value of social space is, it is necessary to go beyond this form and consider the problem of spatial exploration of the world with the help of spatial movement, understood in a broad ideological context, as a priority in the policy of ensuring comfort. Figure 15 shows a variant of the formation of a suit to protect against the effects of low temperatures on the body. This decision was provoked by the need to develop suit sets that guarantee the population comfortable conditions for various climatic zones of the Russian Arctic. therefore, no matter how high the value of social space is, it is necessary to go beyond this form and consider the problem of spatial development of the world with the help of spatial movement, understood in a broad worldview context, as a priority in the policy of providing comfort. Figure 15 shows a variant of the formation of a suit to protect against the effects of low temperatures on the body. This decision was provoked by the need to develop suit sets that guarantee the population comfortable conditions for various climatic zones of the Russian Arctic. therefore, no matter how high the value of social space is, it is necessary to go beyond this form and consider the problem of spatial development of the world with the help of spatial movement, understood in a broad worldview context, as a priority in the policy of providing comfort. Figure 15 shows a variant of the formation of a suit to protect against the effects of low temperatures on the body. This decision was provoked by the need to develop suit sets that guarantee the population comfortable conditions for various climatic zones of the Russian Arctic. as a priority in the policy of providing comfort. Figure 15 shows a variant of the formation of a suit to protect against the effects of low temperatures on the body. This decision was provoked by the need to develop suit sets that

guarantee the population comfortable conditions for various climatic zones of the Russian Arctic. as a priority in the policy of providing comfort. Figure 15 shows a variant of the formation of a suit to protect against the effects of low temperatures on the body. This decision was provoked by the need to develop suit sets that guarantee the population comfortable conditions for various climatic zones of the Russian Arctic.

Figure 15 - Features of the formation of a comfortable suit for the population of the Russian Arctic

Conclusion

As a result, we have to formulate recommendations for the federal Center on what previously unaccounted for factors and how exactly should be taken into account when developing and implementing state policy in relation to the regions of the Arctic Zone of the Russian Federation:

First of all, first of all, it seems important to us to conduct a high-quality and professional examination at the initial stage of formulating the state. policy in relation to the regions of the AZ of the Russian Federation. At the same time, it is important that not only representatives of the Moscow expert community take part in the examination, but also experts located directly in the regions who know the local specifics;

secondly, the national strategy for the development of specific regions, which are, in fact, all regions of the Russian Federation, should be based on the fullest possible set of characteristics of the region, including economic, social, political and, no less important, cultural specifics . As we have already seen in the course of the analysis, ignoring any of these factors can lead, at best, to the absence of positive changes, and at worst, to the appearance of negative consequences that will be difficult to deal with. It is characteristic that in national strategies there is such an obligatory part as a description of the problematic situation, the most “acute” moments, but there is no description of regional specifics.

thirdly, it seems to us that the reform of law enforcement agencies is inevitable in the regions of the AZ of the Russian Federation: when more than 90% of the population of the region do not trust law enforcement agencies, this is a clear and tangible signal to the authorities for active reforms. Further ignoring this problem and removing it from public political discourse will only lead to negative consequences, possibly an increase in violence in these districts. We see the main directions of changes in the law enforcement sphere as follows: it is extremely important to increase the general level of erudition and broaden the horizons of law enforcement officers, they must be familiar with the cultural characteristics of the region through the introduction of compulsory courses on the culture of the North Caucasian republics taught by civil sociologists and culturologists. It also seems important to us to increase the percentage of “locals” among law enforcement officers. This measure will reduce tension between the local population and the security forces, who will no longer be perceived solely as "external invaders" and enemies, besides, the problem of ignorance of local cultural traditions is automatically removed. The problem of the appearance of the "fifth column" is supposed to be solved in this case by raising the general level of education of law enforcement officers, promoting among them general civic, not ethnic values. Law enforcement agencies in the regions of the AZ of the Russian Federation should be under greater control of the Center or regional authorities, since in the current situation with a vertical of power that exists de jure, but does not function de facto, it is often unclear who controls the actions of the security forces, and whether anyone controls them at all. In general, the task of protecting the population from the arbitrariness of the security forces, as in other regions of the Russian Federation, comes to the fore, replacing the task of

combating organized crime, which is characteristic of the zero years of the 21st century. In this regard, one cannot fail to note the need to build relations with regional elites according to new principles, since it is obvious that the existing model of resource distribution between key clans in order to prevent a war of all against all is not effective enough.

Fourth, finally, the priority of financing infrastructure projects, rather than aimless cash injections into the region, seems essential, moreover, infrastructure projects should be understood in a slightly different way, different from the understanding of the current government. The need for infrastructure projects should also be assessed with the involvement of the expert community in various categories, among which there must be such a criterion as the need for the population and the ability of the population to use the new facility. Social infrastructure facilities (education, medicine, etc.) are of particular importance for the regions of the AZ of the Russian Federation (education, medicine, etc., according to these indicators, the regions of the AZ of the Russian Federation significantly lag behind the average Russian values, and it is education and medicine that have a significant impact on the attitude of the population to power, satisfaction with life) .. The strategy of the federal center must also be changed in terms of creating jobs - to move from direct or indirect budget financing of new jobs to creating favorable conditions for doing business, increasing the self-organization of citizens. This task is closely related to the reform of law enforcement agencies, and, in fact, is doomed without qualitative changes in the system of law enforcement agencies and the judiciary, as the main guarantors of the protection of private property. We consider it necessary to recall the importance of institutional changes in the region, which, in fact, are fundamental, since no “sustainable development”, declared as the main task in the FTP, is possible without normally functioning institutions.

Summing up, I would like to note that the strategic government documents on interaction with the regions of the AZ of the Russian Federation can be called insufficiently elaborated and of insufficient quality, namely:

Firstly, the degree of possible regulatory impact is reduced due to the lack of specific methods for achieving the set goals in the national program, despite the fact that the goals are very specific. Such a combination of specific goals and "blurred" methods leads to shifting the responsibility for achieving the goals exclusively to the regional authorities, who are forced to independently develop ways to achieve the targets;

secondly, a characteristic feature of government strategies is the fundamental disregard for regional specifics: despite the presence of descriptions of key regional problems in program documents, the analysis of regional specifics (institutional, cultural, social) is present only at the level of a “brief reference” about the region, which, of course, is not enough to develop an adequate strategy for socio-economic development.

It is curious that the analyzed strategic documents ignore not only the cultural characteristics of the North Caucasus region, which have a very serious impact on all spheres of life of these societies through existing institutional structures, but also socio-economic characteristics, such as the causes of unemployment and the specifics of employment in the region or availability of demand for sanatorium-tourist services. All of the above factors, as well as many others, have a significant impact on the process of implementing the strategy, and on the possible results of its implementation. In other words, without a comprehensive preliminary analysis of regional specifics, the development of a national strategy for the socio-economic development of the regions of the Arctic Zone of the Russian Federation does not look very successful. Initially, we were guided by the assumption that that in the state policy in relation to the regions of the AZ of the Russian Federation, some important factors are not taken into account, which negatively affect the results of the policy being pursued. Ignoring regional specifics is not a distinctive feature of the Center's policy exclusively in relation to the RF AZ: regional cultural and institutional features are not fully taken into account when developing federal strategies and target programs, in principle, in relation to all regions of the Russian Federation.

References:

1. (2019). *On the possibilities of regulatory documentation developed within the framework of the quality management system (QMS) for the digital production of defect-free import-substituting products:* monograph / A.V. Golovko [and others]; under total ed. Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.227). Novocherkassk: Lik.
2. (2022). *On the priority of the territory of advanced socio-economic development of small*

and medium-sized cities in the regions of the Southern Federal District and the North Caucasus Federal District in the production of demanded and competitive products by market consumers; with the participation and under total. ed. Master A.A. Blagorodova., Dr. tech. sciences, prof. V. T. Prokhorov; Institute of Service and Entrepreneurship (branch) Don State Technical University, Doctor of Economics, prof. G. Yu. Volkova, OOO TsPOSN "Orthomoda". (p.544). Moscow: Editus.

3. (2022). *On the importance of forming a territory of advanced socio-economic development on the basis of the mining towns of the Rostov region for the production of products in demand by consumers in the Russian Federation and the regions of the Southern Federal District and the North Caucasus Federal District;* with the participation and under total. ed. Bachelor A.A. Blagorodova., Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) Don State Technical University, Doctor of Economics, prof. G.Yu. Volkova, OOO TsPOSN "Orthomoda". (p.668). Moscow: Reglet.
4. (2021). *Methodological and socio-cultural aspects of the formation of an effective economic policy for the production of high-quality and affordable products in the domestic and international markets:* monograph /O.A. Golubeva [i dr.]; with the participation and under total. ed. Ph.D. n., prof. Mishina Yu.D., Dr. of Tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.379). Novocherkassk: Lik.
5. (2020). *Features of quality management manufacturing of import-substituting products at the enterprises of the regions of the Southern Federal District and the North Caucasus Federal District using innovative technologies based on digital production:* monograph /O.A. Golubeva [i dr.]; with the participation and under total. ed. Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.584). Novocherkassk: Lik.
6. (2018). *Managing the real quality of products and not advertising through the motivation of the behavior of the leader of the team of the light industry enterprise:* monograph / O.A. Surovtseva [i dr.]; under total ed. Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.384). Novocherkassk: YuRGPU (NPI).
7. (2018). *The competitiveness of the enterprise and the competitiveness of products is the key to successful import substitution of goods demanded by consumers in the regions of the Southern Federal District and the North Caucasus Federal District:* a collective monograph / V.T. Prokhorov [and others]; under total ed. Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.337). Mines: ISOiP (branch) DSTU.
8. Aleshin, B.S., et al. (2004). Philosophy and social aspects of quality. (p.437). Moscow: Logos.
9. Porter, M. (2005). *Competition*. per. from English. (p.608). Moscow: Ed. house "Williams".
10. (2015). *"GOST R ISO 9001-2015. National standard of the Russian Federation. Quality management systems. Requirements"* (approved by Order of Rosstandart dated September 28, 2015 N 1391-st) (together with "Explanation of the new structure, terminology and concepts", "Other international standards in the field of quality management and quality management systems developed by ISO/TC 176") [Electronic resource], Retrieved from http://www.consultant.ru/document/cons_doc_LAW_194941/
11. (2015). *GOST ISO 9000-2015. Interstate standard. Quality management systems. Basic provisions and dictionary* [Electronic resource]. Retrieved from http://www.consultant.ru/
12. (2019). *Quality management system - the basis of technical regulation for the production of import-substituting products*: monograph / A.V. Golovko [and others]; under total ed. Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.326). Novocherkassk: YuRGPU (NPI).