SECTION 2. Applied mathematics. Mathematical modeling.

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DISTRIBUTION OF SPEEDS OF A WORKING BODY OF THE RIPPER OF THE SOIL UNDER DIFFERENT LENGTHS LINKS

The paper describes the process and computer algorithms to calculate the speed of movement of the working body of the ripper of the soil.
Key words: soil, Ripper, Delphi.

Speed of movement of teeths Ripper soil directly affects the nature of splitting the frozen soil. Determination of the optimal lengths links is quite a topical problem in the construction Ripper with traectory movement of the teeths and the development of their designs, but also to improve their effectiveness. In order to study the workflow Ripper above structure will determine the dependence between the lengths of the three links and tangential speed of the teeths Ripper. Dimensions of the work item remain unchanged. Teeth describe the trajectory, respectively counterclockwise, and in the form of an arc of a circle.

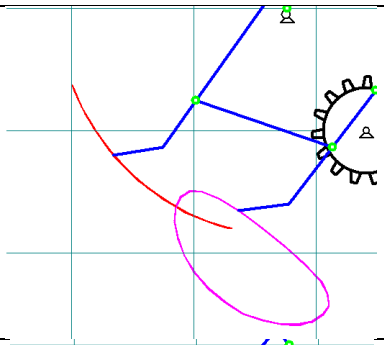
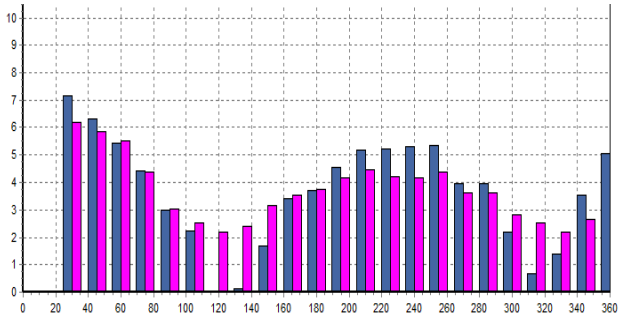
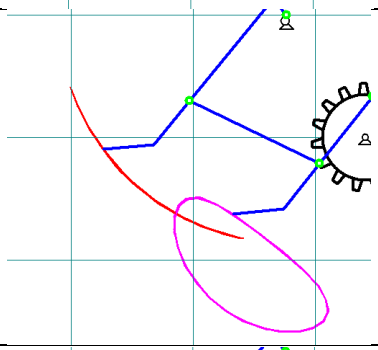
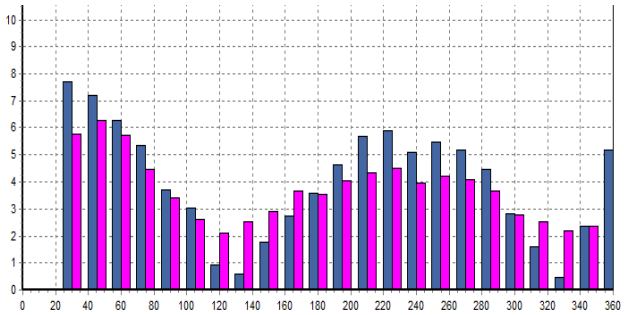
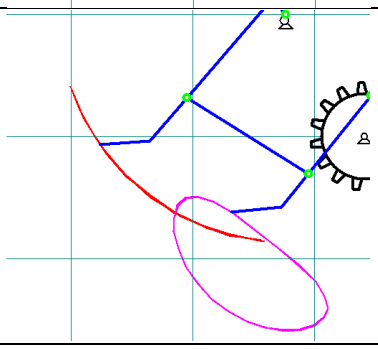
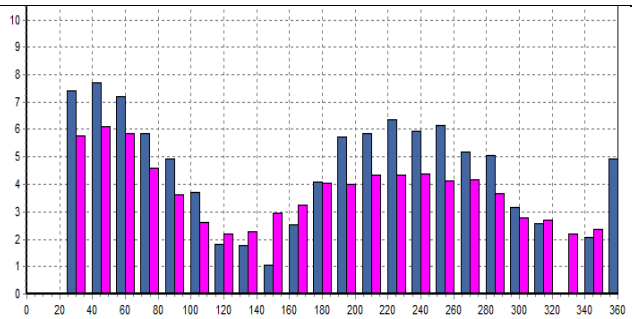
We adopt the following initial conditions:

- speed of rotation of top gear: 500 rpm.
- links L_1, L_2, L_3 will vary.

All received data will be documented in a table (table 1).

Table 1

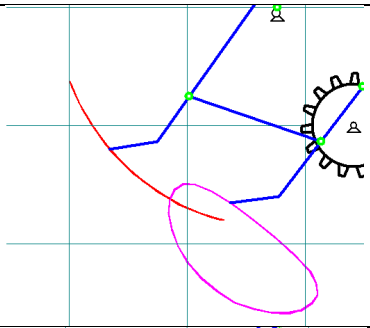
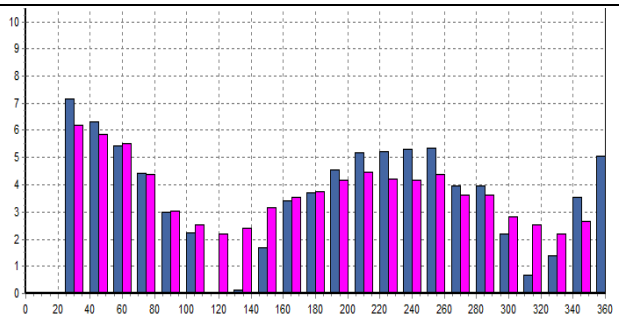
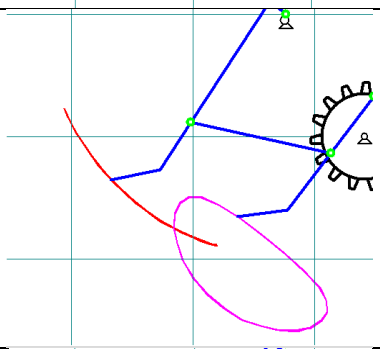
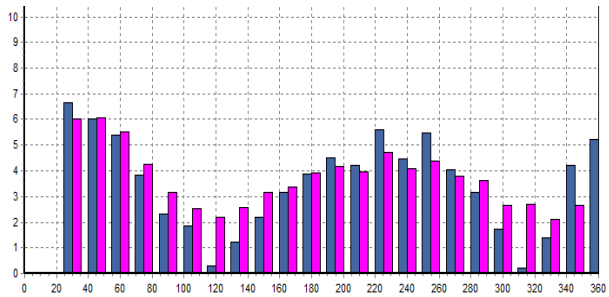
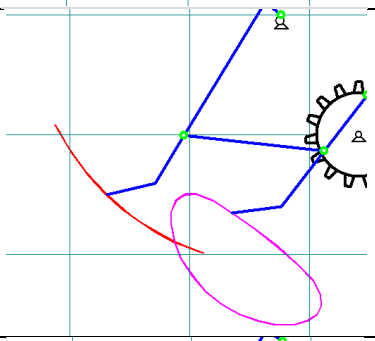
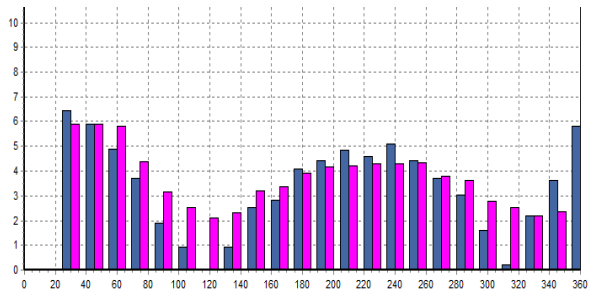
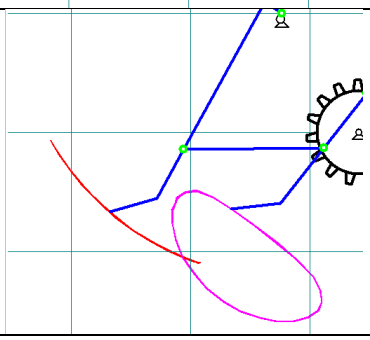
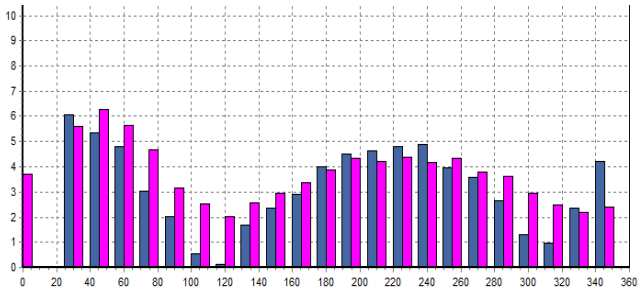
Change L_1

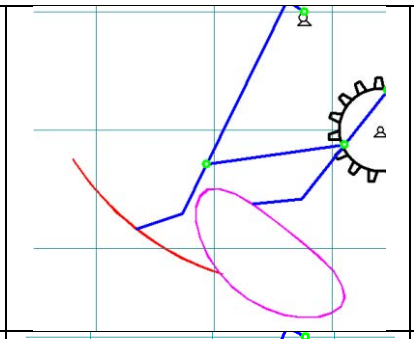
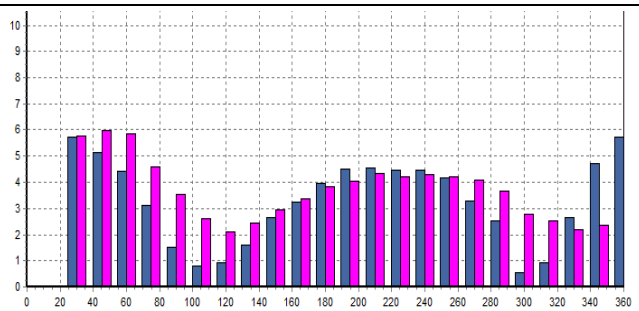
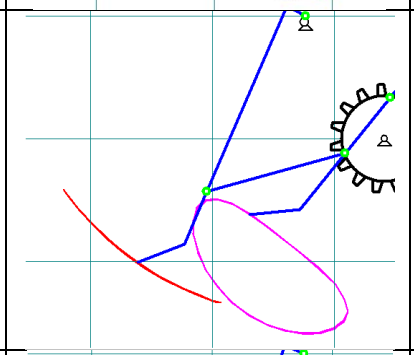
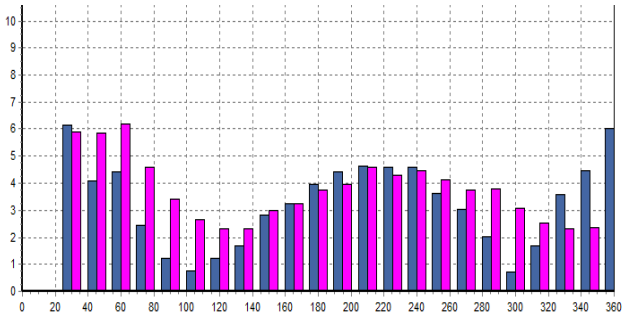
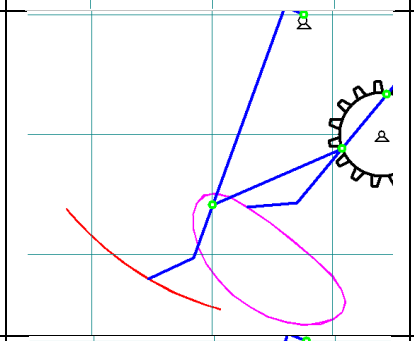
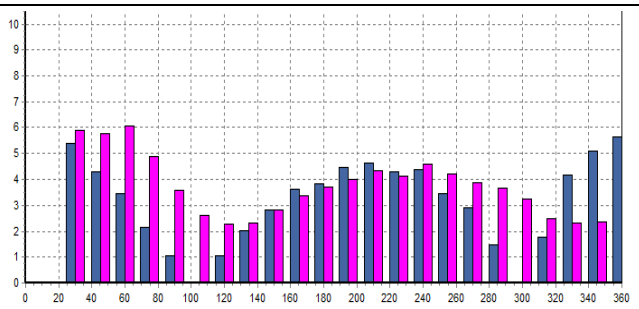
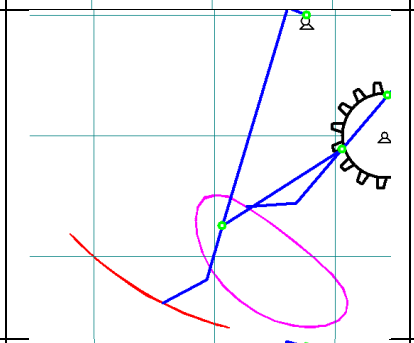
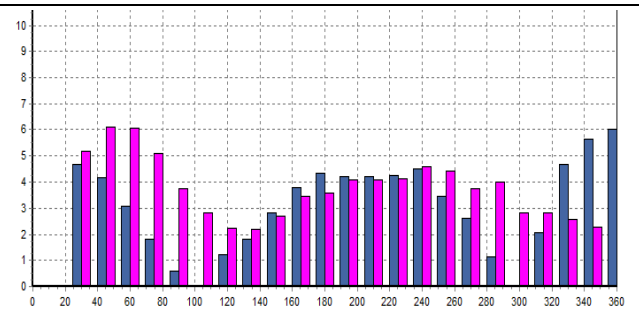
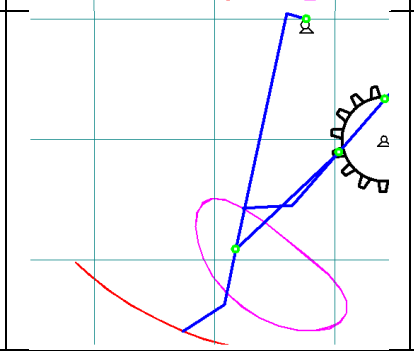
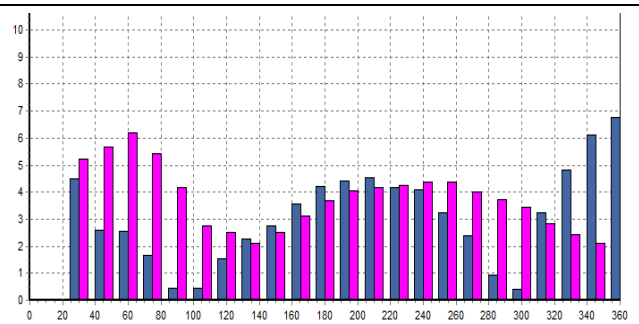
№	L_1 L_2 L_3	A form of motion teeths	Distribution of speed
1	**100** 180 200		
2	**120** 180 200		
3	**140** 180 200		

A further increase L_1 leads to destruction mechanism. Consider now the change L_2.

Table 2

Change L_2

№	L_1 L_2 L_3	A form of motion teeths	Distribution of speed
1	100 **180** 200		
2	100 **200** 200		
3	100 **220** 200		
4	100 **240** 200		

5	100 **260** 200		
6	100 **280** 200		
7	100 **300** 200		
8	100 **320** 200		
9	100 **340** 200		

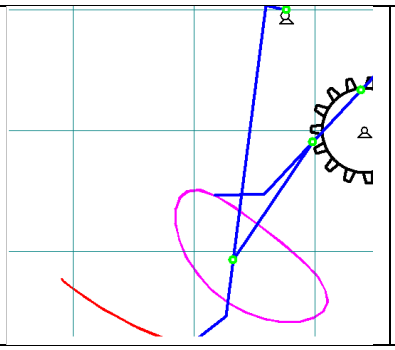
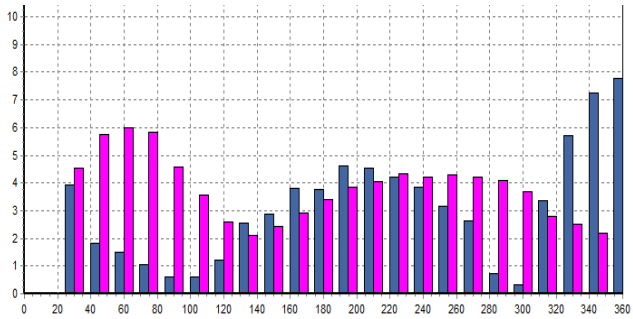
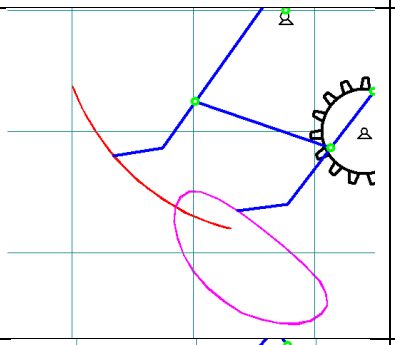
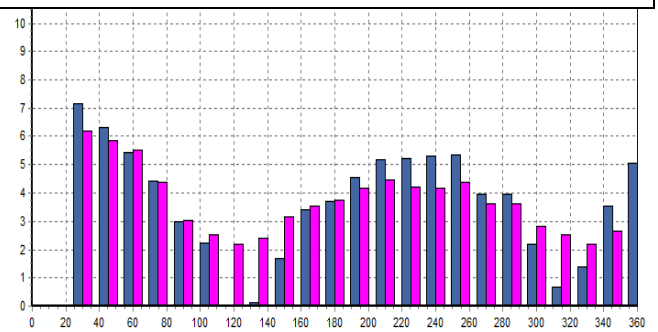
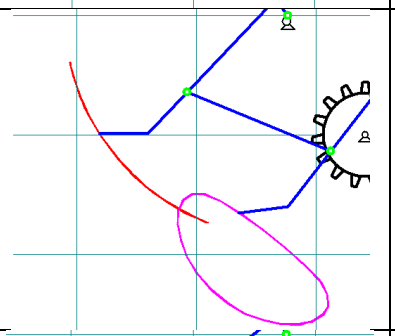
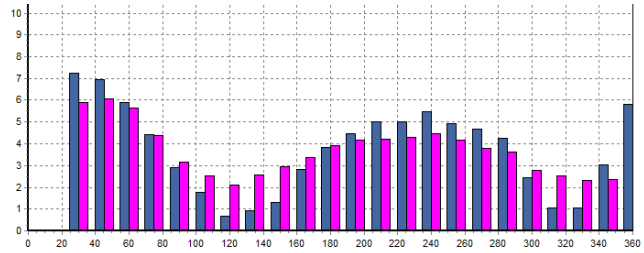
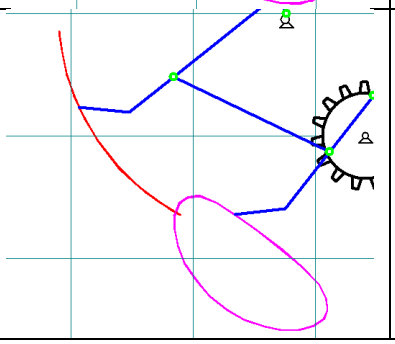
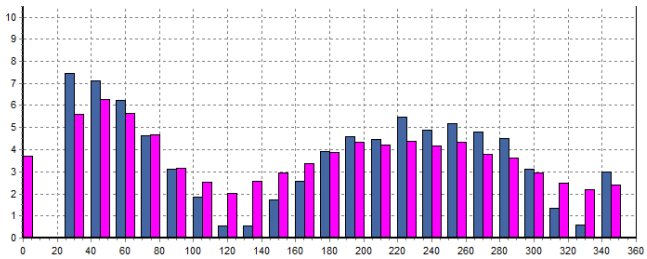
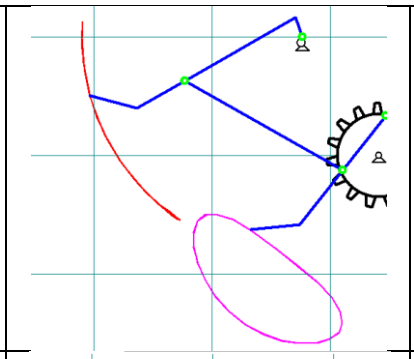
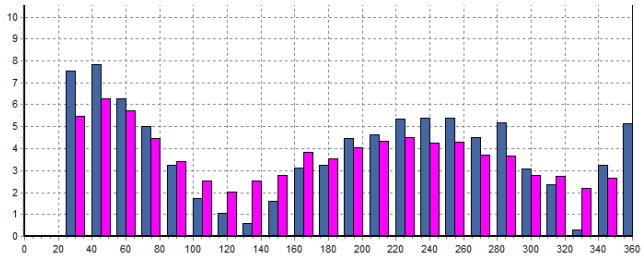
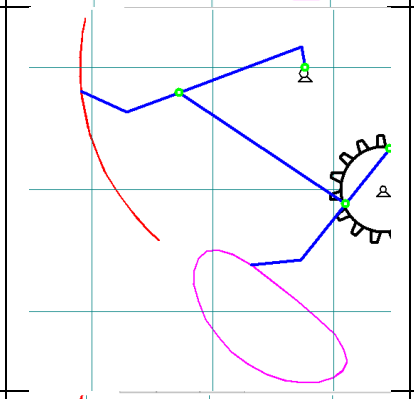
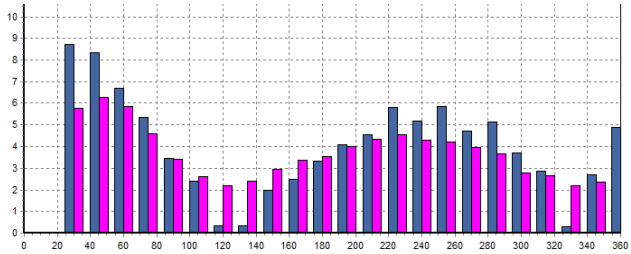
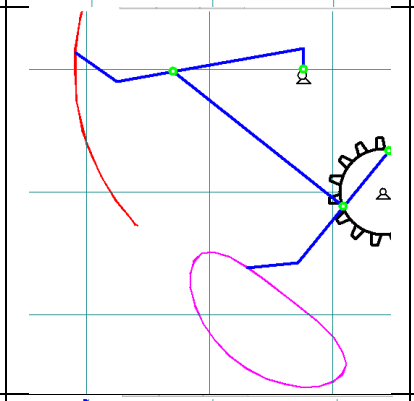
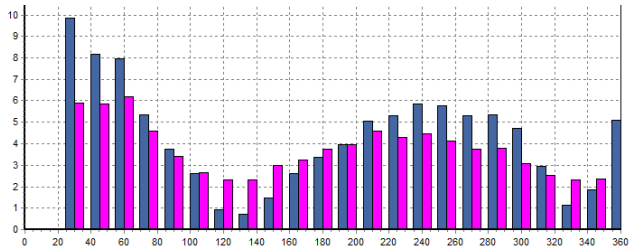
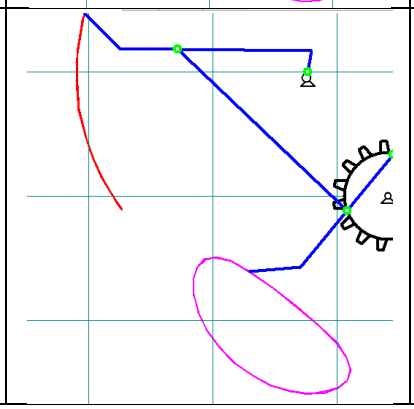
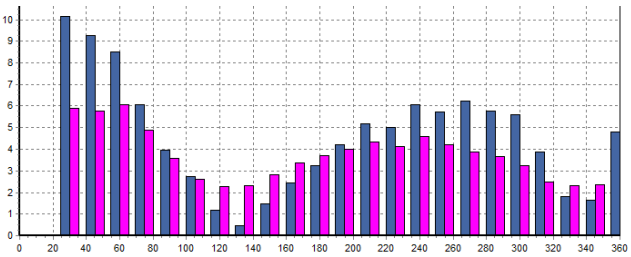
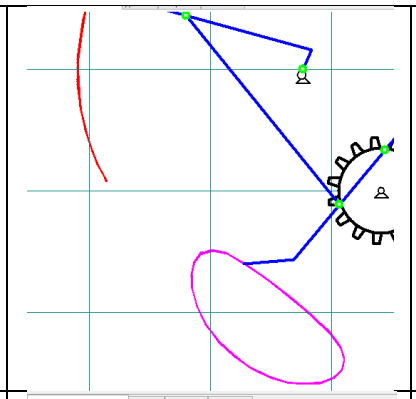
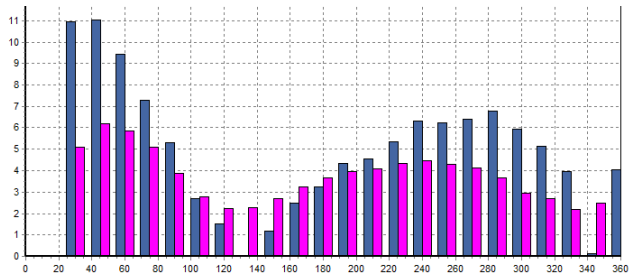
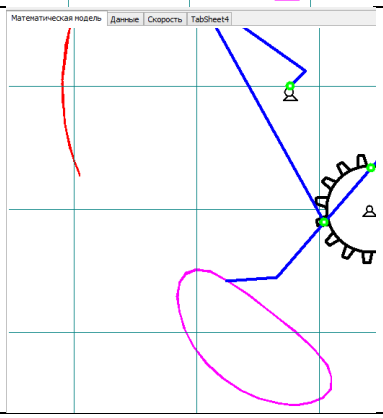
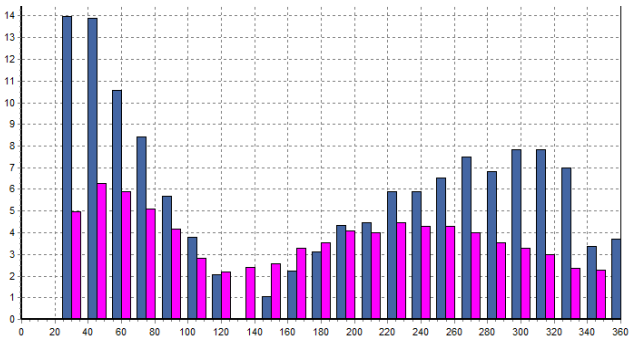
10	100 **360** 200		

Table 3

Change L_3

№	L_1 L_2 L_3	A form of motion teeths	Distribution of speed
1	100 180 **200**		
2	100 180 **220**		
3	100 180 **240**		

4	100 180 **260**		
5	100 180 **280**		
6	100 180 **300**		
7	100 180 **320**		

8	100 180 **340**		
9	100 180 **360**		

The obtained distributions are required at the analysis of the resilience of soils exposed to the teeth Ripper with trajectory movement of teeths.

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