A classic pursuit problem is studied with two material points — a Pursuer and an Evader, who move in plane at constant speeds. The velocity vector of the Evader does not change its direction and the velocity vector of the Pursuer turns and is always aimed at the Evader. If the Pursuer moves at a higher speed, he will overtake the Pursued for any initial angle between velocity vectors.

The mechanical path geometry is established. The path line rotates around the origin of coordinates so that at the final meeting point the line tangent to the motion trajectory always coincides with the velocity vector of the Evader.

The two-parameter integral for the length of the pursuit curve is considered, its asymptotics up to quartic is calculated on the assumption that the speed of the Pursuer is much higher than the speed of the Evader. Rapid convergence of the asymptotics to the integral for the path length is provided by the absence of the first and third members of the asymptotic expansion. Numerical computation of the path length is compared to the asymptotic formulas. Calculations show that the resulting asymptotics is a good approximation of the integral for the path length, and the quartic in the asymptotic formulas significantly improves the approximation.

**Key words:** pursuit problem, motion path, asymptotics, path length.

**References**


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