Monday, March 24, 2025
from 4:45 p.m. to 6:20 p.m. (Moscow time)
room 16-10 and ZOOM translation

Daniil A. Ilyukhin

The Fermat–Torricelli problem in normed spaces

The presentation will cover my work on the Fermat–Torricelli problem — the task of finding a point that minimizes the sum of distances to the elements of a subset in a metric space. Historically, solutions to this problem were limited to the Euclidean plane; however, effective methods for constructing complete solutions in arbitrary normed spaces emerged in the last century. My work focuses on scenarios where solutions are non-unique. I will discuss the conditions under which such solutions exist for a given number of points and analyze concrete examples of norms in the plane and three-dimensional space. Additionally, I will present findings on the stability of solutions — specifically, their ability to preserve non-uniqueness under small perturbations of the points in the set. This research has yielded corresponding conditions on the norm, as well as an algorithm for constructing bifurcation diagrams that illustrate stability.

SCIENTIFIC SEMINAR
"DIFFERENTIAL GEOMETRY AND APPLICATIONS"

headed by Academician of RAS Anatoly T. Fomenko

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