

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

Igor M. Nikonov

Homotopy classes of diagram elements and colorings

The arcs and crossings of a knot can be interpreted as isotopy classes of arc and crossing probes. In the talk, we consider the homotopy classes of probes of diagram elements, and demonstrate that the sets of these classes are fundamental for algebraic objects that are responsible for coloring diagrams of knots. For arcs, these algebraic objects are quandles; for regions, they are partial ternary quasigroups; for semiarcs, they are biquandoids; and for crossings, they are crossoids.

We introduce the multicrossing complex of a knot and define the crossing homology class. In a sense, the crossing homology class unifies the tribracket, biquandle and crossoid cocycle invariants.

**SCIENTIFIC SEMINAR
“DIFFERENTIAL GEOMETRY AND APPLICATIONS”**

headed by Academician of RAS Anatoly T. Fomenko

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