Monday, May 12, 2025 from 4:45 p.m. to 6:20 p.m. (Moscow time) room 16-10 and ZOOM translation

Alexander B. Zheglov

String equation in the ring of differential operators and the Dixmier conjecture for the first Weyl algebra

I will talk about the correspondence between the solutions of the string equation [P,Q]=1 in the ring of differential operators (and in particular, in the first Weyl algebra) and pairs of commuting ordinary differential operators of rank one. The solutions of the string equation in the first Weyl algebra describe all its endomorphisms, and thus it is possible to obtain conditions that single out endomorphisms that are not automorphisms (the Dixmier conjecture for the first Weyl algebra). The indicated correspondence is applied to the proof of the Dixmier conjecture, the outline of which I will try to present in the talk. The proof is also based on the theory of normal forms for ordinary differential operators and the technique of Newton polygons for the first Weyl algebra.

SCIENTIFIC SEMINAR "DIFFERENTIAL GEOMETRY AND APPLICATIONS"

headed by Academician of RAS Anatoly T. Fomenko

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