

September 16, 2024, from 4:45 p.m. to 6:20 p.m. (Moscow time)  
room 16-10 and broadcast via ZOOM

**Gleb V. Belozerov**

*Topology of Liouville foliations of integrable billiards  
in three-dimensional Euclidean space*

Currently, integrable billiards and their generalizations are being actively studied. It is well known that billiards on two-dimensional book-tables, introduced by V.V. Vedyushkina, realize Liouville foliations of many integrable systems of physics, mechanics and geometry. This report will be devoted to the topology of Liouville foliations of integrable billiards in three-dimensional Euclidean space. A complete Liouville classification of confocal billiards on quadrics in  $\mathbb{R}^3$ , namely, on ellipsoids, one-sheeted and two-sheeted hyperboloids, is obtained. A semilocal structure of nondegenerate singularities of three-dimensional confocal billiards is described. Homeomorphism classes of non-singular isoenergetic surfaces of three-dimensional confocal billiards, as well as a billiard in a Hooke potential field inside an triaxial ellipsoid are found.

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

headed by Academician of RAS Anatoly T. Fomenko

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