

October 5, 2020

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*Singularities of geodesic flows in 2D signature
varying metrics: Ten years later*

The talk presents a survey on singularities of geodesic flows in smooth 2-dimensional metrics of varying signature (such metrics are often called pseudo-Riemannian). Generically, a pseudo-Riemannian metric degenerates on a smooth curve. Degenerate points of a pseudo-Riemannian metric are singular points of the corresponding geodesic flow. The standard existence and uniqueness theorem fails, and geodesics cannot issue from degenerate points in arbitrary tangential directions, but in some "admissible" directions only. Generically, the number of admissible directions is finite, at almost all degenerate points it is 1 or 3, at isolated points of the degenerate curve it is 2. The behavior of geodesics at degenerate points also differs from the Riemannian case. The main technique for the study of singularities of geodesic flows is the theory of local normal forms of vector fields with non-isolated singular points. A brief survey of the results can be found here: <https://arxiv.org/pdf/1801.09815.pdf>

SCIENTIFIC SEMINAR

“DIFFERENTIAL GEOMETRY AND APPLICATIONS”

headed by Academician of RAS Anatoly T. Fomenko

The seminar takes place online in ZOOM on Mondays
from 5:45 p.m. to 7:20 p.m. (Moscow time)

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