**November 18, from 4:45 p.m. to 6:20 p.m. (Moscow time)
room 16-10 and broadcast via ZOOM**

Andrey Yu. Konyaev

Finite-dimensional integrable systems and finite-zone type solutions of coupled multi-component systems with dispersion

It is a well-known fact, that special solutions of the systems of geodesic flow with potential type yield solutions of the KdV equation. These effects were observed for C.Neumann systems, geodesic flow on ellipsoid and many others

Developing the Nijenhuis geometry we stumbled upon the geometric mechanism of this effect. This relation — that is passing from finite-dimensional system to infinite-dimensional system — is typical for a large class of systems, admitting the separation of variables in particular. The solutions, appearing in this framework are of finite-zone (where the term is applicable) type.

Another interesting fact is that naturally the obtained solutions correspond to multicomponent coupled systems, such as Caup–Boussinesq, for example. That is the relation works for a large family of solutions.

Note that besides it wide applicability the method is interesting for its simplicity: it does not use the notion of Lax pairs or any other complicated machinery of integrable system. Basically, the only thing one needs is the knowledge of integration in quadratures concept, known since the XIX century.

**SCIENTIFIC SEMINAR
"DIFFERENTIAL GEOMETRY AND APPLICATIONS"**

headed by Academician of RAS Anatoly T. Fomenko

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