

Thursday, Oct. 12 at 2:00pm

Lecture by Vladimir Matveev (Friedrich-Schiller-Universität Jena, Germany)

Title: Applications of Nijenhuis Geometry: finite-dimensional reductions and integration in quadratures of certain non-diagonalizable systems of hydrodynamic type.

Abstract: Nijenhuis Geometry is a recently initiated research program, I will recall its philosophic motivation and fundamental results. New part of my talk is related to applications of these results in the theory of infinite-dimensional integrable systems and includes the following topics

- (1) Construction of a large (the freedom is a number of functions of one variable) family of integrable systems of hydrodynamic type. Different from most previously known examples, the corresponding generators are not diagonalizable.
- (2) Finite-dimensional reductions of such systems. The commuting functions of the corresponding finite-dimensional integrable systems are quadratic in momenta and can be viewed as a metric and its (commuting) Killing tensors.
- (3) Integration of such systems in quadratures.

This is a work in progress in collaboration with Alexey Bolsinov and Andrey Konyaev.