

SPEAKER:

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TITLE:

Frobenius manifolds and integrable evolutionary PDEs

ABSTRACT:

The notion of Frobenius manifolds was introduced by Boris Dubrovin in the early 1990s. It is a geometric characterization of the Witten-Dijkgraaf-Verlinde-Verlinde equations of associativity which arise in the study of 2d topological field theory and has played important roles in the study of Gromov-Witten theory, singularity theory, integrable systems and some other research fields of mathematical physics. In this talk, I will recall the definition and basic properties of Frobenius manifolds, explain how to associate a semisimple Frobenius manifold with a hierarchy of integrable evolutionary PDEs, and review some recent progresses in the study of properties of such integrable hierarchies, including their bihamiltonian structures and Virasoro symmetries.