

Bolgna winter school 12-17 January 2020

Course title: Soliton equations (Integrable systems)

Algebraic-geometrical integration theory of soliton equations

*Course description:* A self-contained introduction to the theory of soliton equations with an emphasis on its applications to algebraic-geometry. Topics include:

1. General features of the soliton systems. Basic hierarchies of commuting flows: KP, 2D Toda, Bilinear Discrete Hirota hierarchy. Discrete and finite-dimensional integrable systems.
2. Algebraic-geometrical integration theory. Spectral curves. Baker-Akhiezer functions.
3. Hamiltonian theory of soliton equations.