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Integrable many-body systems of Calogero-Ruijsenaars type

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Abstract

Calogero-Ruijsenaars type models describe interacting particles that move in one spatial dimension (e.g. on a line or circle). In these systems, the equations of motion can be exactly solved due to the presence of many independent commuting first integrals. They occupy a central position among integrable models and serve as a busy crossroad between various subfields in mathematics and physics.

In this talk, we give an introduction to Calogero-Ruijsenaars type systems, explain the origin of their integrability from the viewpoint of Hamiltonian reduction, and discuss how this approach led to new results on models with multiple coupling parameters.

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