An algebraic method to construct classical and quantum Hamiltonian integrable systems

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Abstract

The algebras of classical and quantum observables are particular cases of Jordan–Lie algebras. We give a recipe to construct Jordan–Lie algebras with "large" Abelian subalgebras. Then we give morphisms from such algebras on classical and/or quantum observables algebras such that the image of the Abelian subalgebra provide us with an integrable system.