MAFIA - seminář, který se neodmítá

Self-adjoint extensions of rational Calogero-type models

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pátek 26.4. 2013 od 11:30 v místnosti T112

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Abstract: Self-adjoint extension of the rational Calogero model with suitable boundary conditions leads to inequivalent quantization of the system. The corresponding spectrum is non-equispaced consisting of infinitely many positive energy states and at most a single negative energy state. Similar studies for the rational Calogero model without the harmonic term allows new bound and scattering states. The self-adjoint extension generically breaks the classical scaling symmetry, leading to quantum mechanical scaling anomaly. Results for many particle systems with classically scale invariant long range interactions in arbitrary dimensions will be presented.