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MCQM Seminar: Alessandro Teta (Sapienza Università di Roma)

Wednesday, 24 April 2024 14:15 (1 hour)

Title: Many-particle systems with contact interactions

Abstract: Quantum Hamiltonians with contact (or zero-range) interactions are useful models to analyze the behaviour of quantum systems at low energy in different contexts. In this talk we discuss recent mathematical results on the construction of such Hamiltonians for a system of $N \geq 3$ interacting bosons in dimension three as self-adjoint and lower bounded operators in the appropriate Hilbert space. We will also show the connection with a previous result obtained by Albeverio, Hoegh-Krohn and Streit in 1977 and we will discuss possible applications to the Efimov effect.
The talk is based on a series of works in collaboration with G. Basti, C. Cacciapuoti, D. Ferretti, R. Figari, D. Finco and H. Saberbaghi.