



Mathematics and CS Seminar

SEMICLASSICAL LIMIT FOR ALMOST FERMIONIC ANYONS

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Host: Robert Seiringer

In two-dimensional space there are possibilities for quantum statistics continuously interpolating between the bosonic and the fermionic one. Quasi-particles obeying such statistics can be described as ordinary bosons and fermions with magnetic interactions. We study a limit situation where the statistics/magnetic interaction is seen as a “perturbation from the fermionic end”. We vindicate a mean-field approximation, proving that the ground state of a gas of anyons is described to leading order by a semi-classical, Vlasov-like, energy functional. The ground state of the latter displays anyonic behavior in its momentum distribution. After introducing and stating this result I will give elements of proof based on coherent states, Husimi functions, the Diaconis-Freedman theorem and a quantitative version of a semi-classical Pauli principle.

Thursday, April 22, 2021 04:15pm - 05:15pm

IST Austria Campus Online via Zoom



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