Mathematics and CS Seminar

The Strongly Coupled Polaron in a Translational Invariant Setting: Quantum Corrections to the Pekar Asymptotics

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Host: Robert Seiringer

In this talk I shall present recent progress on the Fröhlich Polaron model in the strong coupling regime, obtained in collaboration with Robert Seiringer. In particular, I will focus on quantum corrections to the Pekar asymptotics for its ground state energy. Compared to previous works, the main novelty is that we are able to treat the problem in a translational invariant setting, namely a (sufficiently large) torus in R^3. This substantially complicates the discussion and calls for a precise study of the set of minimizers of the classical functional(s) corresponding to the Fröhlich Hamiltonian. We carry out this study by introducing an (almost) infinite dimensional diffeomorphism and formalizing some heuristic arguments contained in the physics literature.

Thursday, December 10, 2020 04:15pm - 05:15pm
IST Austria Campus Online via Zoom