



## Mathematics and CS Seminar

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

**Dario Feliciangeli (IST Austria)**

**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  $\mathbb{R}^3$ . 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



This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: <https://ist.ac.at/en/campus/how-to-get-here/> The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.