

Transport in the low density Fermi Hubbard model

Xavier Leyronas

LPENS, 24 rue Lhomond 75005 Paris

In this talk, I will present some theoretical work we have made that was motivated by experiments of the team of Joseph Thywissen in Toronto (arXiv.2510.19395). We have computed the ac conductivity of fermions in an optical lattice plus a parabolic trap. The method is based on the Boltzmann equation that is expected to be correct in a regime where the filling factor is small. We propose an Ansatz for the distribution function that enable to calculate the ac conductivity in a closed form. I will present the derivation of the formula and comparison to experiments.