

# Titel: Effective mass of the polaron - revisited

Speaker: Wojciech Dybalski (TU München)

## Abstract:

Properties of the energy-momentum relation for the Fröhlich polaron are of continuing interest, especially for large values of the coupling constant. By combining spectral theory with the available results on the central limit theorem for the polaron path measure we prove that, except for an intermediate range of couplings, the inverse effective mass is strictly positive and coincides with the diffusion constant. Such a result is established also for polaron-type models with a suitable ultraviolet cut-off and for arbitrary values of the coupling constant. We point out a slightly stronger variant of the central limit theorem which would imply that the energy-momentum relation has a unique global minimum attained at zero momentum. (Joint work with Herbert Spohn).