ID de Contribution: **39** Type: **Non spécifié**

Radio-frequency response and contact of impurities in a quantum gas (ONLINE presentation)

jeudi 9 septembre 2021 15:00 (1 heure)

We investigate the radio-frequency spectroscopy of impurities interacting with a quantum gas at finite temperature. In the limit of a single impurity, we show using Fermi's golden rule that introducing (or injecting) an impurity into the medium is equivalent to ejecting an impurity that is initially interacting with the medium, since the "injection"and "ejection"spectral responses are simply related to each other by an exponential function offrequency. Thus, the full spectral information for the quantum impurity is contained in the injection spectral response, which can be determined using a range of theoretical methods, including variational approaches. We use this property to compute the finite-temperature equation of state and Tan contact of the Fermi polaron. Our results for the contact of a mobile impurity are in excellent agreement with recent experiments and we find that the finite-temperature behavior is qualitatively different compared to the case of infinite impurity mass.

Orateur: Prof. LEVINSEN, Jesper (Monash University)