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The 2N+1 many-body body problem; an impurity immersed in a spin 1/2 ferminonic superfluid (ONSITE presentation)

lundi 23 août 2021 14:00 (1 heure)

The polaron is one of the paradigmatic concepts of many-body physics that describes the properties of the quasi-particle arising from the interaction between an impurity and a many-body environment. First introduced by Landau and Pekard to describe the behaviour of an electron shrouded by a cloud of phonons in a crystal, it has recently been applied to ultracold atoms where the properties of atomic impurities immersed in weakly interacting Fermi and Bose gases have been studied both theoretically and experimentally. In my talk I will describe how recent experiments on mixtures of ultracold Bose and Fermi gases have further extended the scope of polaronic physics by addressing the properties of impurities immersed in a strongly interacting medium. In particular I will discuss the crucial role played by three body-physics in this problem.

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