

Strongly Interacting Alkali-Earth Atomic Gases

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In this talk I will describe how to reach strongly interacting many-body physics with alkali-earth atoms. I will first describe the orbital Feshbach resonance (OFR) we proposed, and recent experimental confirmation of the OFR. I will discuss the resonance width, bound state energy and other properties of OFR, and I will talk about many-body problems nearby OFR, such as the two-gap BEC-BCS crossover physics, Leggett mode, and cross-channel contact.

References:

[1] Ren Zhang, Yanting Cheng, Hui Zhai and Peng Zhang, Phys. Rev. Lett. 115, 135301 (2015)