

Efimov states in three-atomic systems

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Three-atomic molecules at ultralow energies are of a great interest in both experiment and theory. The ability to control the scattering length in ultracold gases make these systems ideal candidates for experimental study of Efimov physics [1]. After the first successful observation of Efimov states in an ultracold Cesium gas [2], a lot of the experimental evidence for the Efimov states in three-atomic systems consisting of He, Li, K, Rb, Cs atoms and its combinations were reported (see review [3]).

The properties of ultracold triatomic systems are determined by the van der Waals interaction. Analyzing interaction potentials between different species we discuss the possible existence of Efimov states in three-body systems. Some our results obtained using Faddeev calculations [4] and a short review of other calculations will be presented.

1. V. Efimov, Phys. Lett. B 33, 563 (1970).
2. T. Kraemer et al., Nature 440, 315 (2006).
3. P. Naidon and Sh. Endo, Rep. Prog. Phys. 80, 056001 (2017).
4. E.A. Kolganova, V. Roudnev, Few-Body Syst. 60, 32 (2019).

Primary author: KOLGANOVA, E.A.

Presenter: KOLGANOVA, E.A.

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