

Manuele Landini

(LENS, Università di Firenze and Università di Trento, Italy)

Universality of the three-body Efimov parameter at narrow **Feshbach resonances**

We measure the critical scattering length for the appearance of the first three-body bound state, or Efimov three-body parameter, at seven different Feshbach resonances in ultracold 39K atoms. We study both intermediate and narrow resonances, where the three-body spectrum is expected to be determined by the non-universal coupling of two scattering channels. We observe instead approximately the same universal relation of the three-body parameter with the two-body Van der Waals radius already found for broader resonances, which can be modeled with a single channel. This unexpected observation suggests the presence of a new regime for three-body scattering at narrow resonances.

6. September 2013, 9:45 Uhr

Universität Stuttgart, NWZII, Raum 3.123 Pfaffenwaldring 57, 70569 Stuttgart

