

Abstract Submitted  
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**Efimov trimers in Lithium 6** PASCAL NAIDON, JST, MASAHITO UEDA, The University of Tokyo — Three atoms can form unusual three-body bound states called Efimov trimers due to a universal attraction arising whenever the scattering lengths between the atoms are much larger than the range of their interactions. Various indirect signatures and first-time direct spectroscopy of such Efimov trimers have been demonstrated in recent experiments [1] using lithium 6 in three different spin states, where the scattering lengths are enhanced by magnetic Feshbach resonances. We found that all these measurements are indeed consistent with the universal Efimov effect, but non-universal deviations at negative energy remain to be understood and have been quantified by a variation of a short-range 3-body parameter [2].

[1] T. B. Ottenstein et al., Phys. Rev. Lett. **101**, 203202 (2008); J. H. Huckans et al., Phys. Rev. Lett. **102**, 165302 (2009); S. Nakajima, et al., Phys. Rev. Lett. **105**, 023201 (2010); T. Lompe et al., Phys. Rev. Lett. **105**, 103201, (2010); T. Lompe et al., Science **330**, 940 (2010).

[2] P. Naidon and M. Ueda, arXiv:1008.2260 (2010); S. Nakajima, M. Horikoshi, T. Mukaiyama, P. Naidon, and M. Ueda, arXiv:1010.1954 (2010).

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