Abstract Submitted
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Universal bound states of two atoms near a Feshbach resonance[1]
SHINA TAN, Georgia Institute of Technology — The Efimov effect was traditionally thought to exist for three or more particles only. It will be shown how to make universal shallow bound states of TWO atoms only, which will exhibit a universal energy spectrum reminiscent of the Efimov effect, by using potentials to constrain the spatial motion of atoms. The two atoms must be tuned near a scattering resonance. Several related types of such two-body states will be described. These diatomic "artificial molecules," if isolated from each other, will be free from three-body recombination, and can have long lifetimes in principle, in contrast with the Efimov bound states of three atoms.

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