

Abstract Submitted
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Quantum Droplet of One-Dimensional Bosons with a Three-body Attraction¹ YUTA SEKINO, YUSUKE NISHIDA, Department of Physics, Tokyo Institute of Technology — We study one-dimensional bosons with a weak three-body attractive interaction and show that they form a many-body droplet stabilized by asymptotic freedom of the system [1]. The ratio of the binding energy of the droplet to that of three bosons are universal and grow exponentially as the number of bosons increases. The realization of our system with coupled two-component bosons in an optical lattice is also discussed [1,2]. [1] Y. Sekino and Y. Nishida, accepted as a Rapid Communication in Phys. Rev. A. [2] D. S. Petrov, Phys. Rev. A 90, 021601(R) (2014).

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