世纪物理情·系列讲座

Quantum droplet in ultracold gases

【报告人】
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【摘要】

Quantum droplet describes a self-bound object that is stabilized by quantum effect. It has a long research history ever since the Kerson Huang's theoretical model in late 1950s and the intensive study of Helium nanodroplet in 1980s. In recent years, quantum droplet has regained great interest in ultracold gases thanks to its realization in both dipolar gases (since 2016) and in binary boson mixtures (2018). In this talk, I will discuss how to use ultracold droplets to engineer and simulate various interesting physical phenomena, including Borromean binding, droplet impact dynamics, and liquid-gas coexistence at zero temperature. While some of the phenomena are typically seen in our classical world, the ultracold droplets offer the opportunity to unveil intriguing quantum effects behind them and allow their explorations in a fully controlled quantum setting.

【报告人简介】

Xiaoling Cui is a professor at the Institute of Physics(IoP), Chinese Academy of Sciences. She got B.S. degree from Shandong University in 2005 and Ph.D. from IoP in 2010. During 2010-2013, she worked as an associated member in the Institute for Advanced Study in Tsinghua University and a research associate in Ohio State University, and after that she joined IoP. Her research interest is to explore and bridge the few- and many-body physics in ultracold atoms and related fields.

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