

# Joint CQSE and CASTS Seminar

Weekly Seminar  
Nov. 24, 2017 (Friday)

TIME Nov. 24, 2017, 14:30 ~ 15:30  
TITLE Few-body Physics in ultracold atoms: the observation of Efimov scaling in Li-Cs-Cs trimers  
SPEAKER Prof. Shih-Kuang Tung  
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PLACE Rm716, CCMS & New Physics Building, NTU

## Abstract

A geometric scaling symmetry that can be found in every series of Russian nesting dolls is rarely found in nature and in physics. Nevertheless, nuclear physicist Vitaly Efimov predicted in 1970 that a geometric scaling symmetry would emerge from three-body bound states of resonantly interacting particles. Following Efimov's prediction, these exotic three-body bound states, now called Efimov states, are being pursued in different physics disciplines such as nuclear, particle, and atomic physics. The observation of Efimov states in ultracold atoms was first reported in 2005, followed by many reports using different atomic species. Despite abundant observations, a model-independent observation of the geometric scaling symmetry has been elusive. In this talk, I will report our observation of three consecutive Efimov states in a  ${}^6\text{Li}$ - ${}^{133}\text{Cs}$  mixture and show that the positions of the states follow closely a geometric progression.

