



## PHYSICS COLLOQUIUM

*Speaker:*

**Dr. Panagiotis Giannakeas**

Max Planck Institute for the physics of complex systems,  
Finite systems division,  
Dresden, Germany.



*Topic:*

**How universal is Efimov physics?**

*Introduction for habilitation*

*Time and  
place:*

Tuesday, December 20, 2022, 4:40 pm – hybrid event

**The colloquium will be held in REC/C213.**

Online participation possible:

Zoom-Meeting: Meeting-ID: 631 3817 8900 / passcode: PK-WiSe22

<https://tu-dresden.zoom.us/j/63138178900?pwd=RVVZM3N4azdmNmVlQ2RWUTZ0TkxXdz09>

*Host:*

Prof. Jan-Michael Rost

*Abstract:*

In physics it is always desirable to identify universal phenomena that apply to many different physical systems with a simple law owing to a minimal set of parameters. In 1970, Vitaly V. Efimov theoretically predicted in the context of nuclear physics, the existence of a set of stable quantum states of particle triplets when the pairwise two-body constituents alone are unstable. The first confirmation of this counter-intuitive phenomenon occurred in 2006 by an experimental team at the University of Innsbruck in Austria who observed the Efimov states in an ultracold gas of Cs atoms. Since then, many theoretical and/or experimental proposals showcased the universal aspects of the Efimov states in the context of nuclear, atomic, or condensed matter physics. Therefore, in this colloquium I will present my recent theoretical efforts to extend the concept of universality of the Efimov physics. In particular, in the context of ultracold atomic physics I will discuss the few-body collisional aspects of mass-imbalanced systems and the corresponding emergent Efimov physics.

*Bio:*

Dr. Panagiotis Giannakeas in 2008 completed his diploma studies in physics from the University of Athens, Greece. In 2013, he received his PhD from the University of Hamburg, Germany, under the supervision of Prof. Peter Schmelcher. Then, he continued as a postdoctoral research associate at Purdue University, Indiana, USA, in the group of Prof. Chris H. Greene. In 2017, he started at the Max Planck Institute for the physics of complex systems in Dresden as a guest scientist initially and since 2020 continue as a staff scientist in the division of finite systems under the supervision of Prof. Jan-Michael Rost.

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