TECHNISCHE UNIVERSITÄT
IN DER KULTURHAUPTSTADT EUROPAS
CHEMNITZ

Institut für Physik
Physikalisches Kolloquium
- Online -

Mittwoch, 15.06.2022, um 11:15 Uhr
Online via ZOOM

Dr. Nikolaos Fytas

Coventry University, UK

Theory and Simulations of Complex Systems in Condensed Matter Physics

In theoretical physics, the behavior of complex and disordered systems cannot typically be inferred from their clean, homogeneous counterpart. In fact, disordered systems are prototypical examples of complex entities in many aspects, mainly in the rough free-energy landscape profile. Standard theoretical approaches are invalidated, and one typically resorts to numerical simulations, which may also be bounded by several constraints.

In this talk I will present a series of recent results where large-scale numerical simulations have indeed allowed us to extract clear answers to some fundamental problems in the following areas of theoretical condensed matter physics:

(i) Phase separation in hybrid soft-matter systems.
(ii) Critical phenomena in pure and disordered magnetic systems.
(iii) Supersymmetry in condensed matter physics.

ZOOM-Link:
https://us02web.zoom.us/j/82310833626