Α ΡΙΣΤΟΤΕΛΕΙΟ
Π ΑΝΕΠΙΣΤΗΜΙΟ
Θ ΕΣΣΑΛΟΝΙΚΗΣ

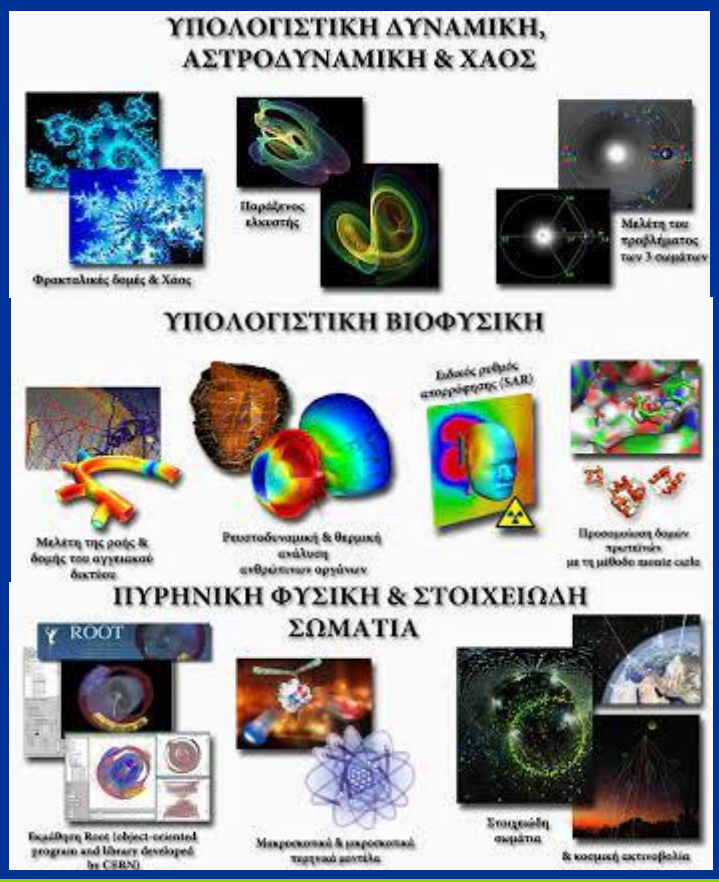
ΣΕΜΙΝΑΡΙΟ
ΠΜΣ ΥΠΟΛΟΓΙΣΤΙΚΗΣ ΦΥΣΙΚΗΣ
ΤΜΗΜΑ ΦΥΣΙΚΗΣ

Τετάρτη 18 Μαΐου 2022

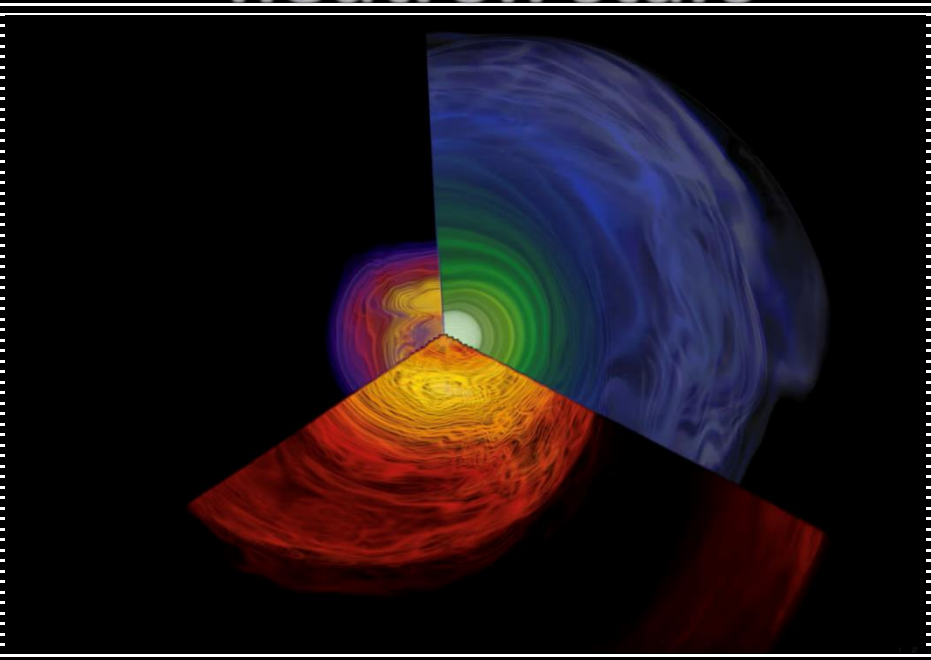
ώρα 17:00

Zoom link: authgr.zoom.us/j/93408351002

Σεμινάρια ΠΜΣ Υπολογιστικής Φυσικής 2021-2022



Probing exotic matter in neutron stars



Veronica Dexheimer

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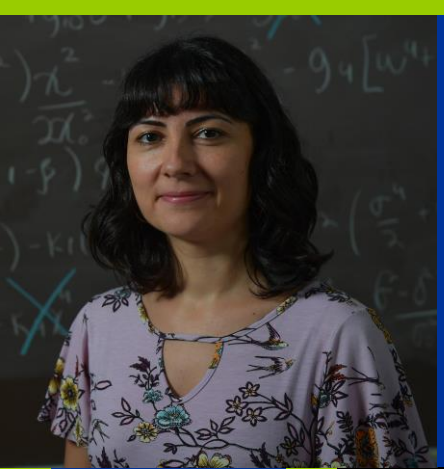
The large density reached in neutron stars and the large density and temperature reached in neutron-star mergers create ideal testing grounds in which to learn about exotic matter, namely hyperons and deconfined quarks. The presence of exotic matter can strongly affect the interior of neutron stars but cannot be easily observed. New electromagnetic and gravitational wave constraints have been slowly narrowing down the dense and cold equation of state and allowing us to learn more about the strong interaction. Nevertheless, constraints on dense and hot matter depend on the not yet observed post-merger portion of gravitational waves from neutron-star mergers and non-trivial comparisons with particle collisions. In this talk, I discuss the latter, and discuss how weak chemical equilibrium, net strangeness, and isospin/charge fraction can affect when and where deconfinement to quark matter occurs.

Το προφίλ του ομιλητή



Veronica Dexheimer is an Associate Professor of Physics and the Director of the Center for Nuclear Research at Kent State University, USA. She received her Ph.D. from the Johann Wolfgang Goethe University, Germany in 2009. After that, she worked as an adjunct Professor in the Gettysburg College, USA (2009-2010) and as a Researcher in the Universidade Federal de Santa Catarina, Brazil (2012). Her main research topic is the study of dense and hot matter inside compact stars. The research in her group focuses on the properties of white dwarfs, neutron stars, proto-neutron stars, and stellar mergers. This includes the effects of extremely large magnetic fields and the formation of exotic particles (different from the ones present in atomic nuclei), such as hyperons and deconfined quarks.