



Contribution ID: 16

Type: **not specified**

Microscopic Vortex Velocity for Neutron Stars

Friday 29 April 2016 15:20 (20 minutes)

Rotational dynamics of a neutron star is governed by the distribution and motion of vortex lines within the neutron superfluid. Interaction of the vortex lines with the ambient matter plays a significant role in the glitches, thermal evolution and magnetic field evolution of pulsars. Thus, correctly treating the vortex motion in the inner crust and the outer core of neutron stars is a key ingredient in modeling a number of observational phenomena of pulsars. In this work we outline the first principles to calculate the microscopic vortex velocity both in the inner crust and outer core. Then we discuss some implications for neutron star's dynamics.

Presenter: Mr GÜGERCINOĞLU, Erbil

Session Classification: Afternoon session