



独立行政法人理化学研究所 仁科加速器研究センター
第65回RIBF核物理セミナー

RIKEN Nishina Center for Accelerator Based Science
The 65th RIBF Nuclear Physics Seminar

Vortices and nuclei in the inner crust of a neutron star

Dr. Paolo Avogadro (RIKEN Nishina Center)

During this talk I will present the HFB calculations of a cell in the inner crust of neutron star. This cells contains several hundred neutrons and forty protons; in particular we have studied the effect of a vortex excitation in the cell.

The physical motivation of this study is to better understand the phenomenon of glitches (sudden spin ups of the rotational frequency) in pulsars.

The main astrophysical quantity we evaluated is the “pinning energy” that is the energetic cost to remove a vortex from the top of a nucleus.

It has been found that semiclassical pictures fail to describe the interaction between vortices and nuclei because of quantal size effects.

**Jul. 16(Wed), 2008 11:00-
RIBF Conf. Hall, RIKEN**

The seminar will be given in English

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