



国立研究開発法人理化学研究所 仁科加速器研究センター
第235回 RIBF核物理セミナー
RIKEN Nishina Center for Accelerator Based Science
The 235th RIBF Nuclear Physics Seminar

Inhomogeneous neutron matter: what we can learn by trapping neutrons?

Dr. Stefano Gandolfi
(Los Alamos National Laboratory)

Properties of the equation of state of homogeneous neutron matter have been widely investigated because of the strong connection with the physics of neutron stars. However, considerably little attention has been given to inhomogeneous neutron matter, that can be theoretically realized by calculating properties of neutrons in external traps.

In this talk I will present several results of neutrons confined in external potentials. I will show applications describing how these simple but unrealistic systems can be very useful information to better constrain density functionals. I will also present recent results of few neutrons trapped in shallow external wells, suggesting that the energy of a 3 neutron resonance might be lower than that of 4 neutrons. The results include some discussion of the role of the three-body interaction, the chiral expansion to derive the neutron-neutron interaction, and on the structure of these systems.

* The talk will be given in English language..

Mar.30th(Thu.)2017 13:30~
Nishina Hall , Nishina bldg., RIKEN

Contact: Nuclear Physics Seminar Organizing Committee
npsoc@ribf.riken.jp
<http://ribf.riken.jp/~seminar/>