

Thursday

May 10th

At 3:45pm

Correlations and Clustering in Dilute Matter

Abstract:

Light clusters (^2H , ^3H , ^3He , ^4He) are formed in nuclear matter at low densities.

A quantum-statistical approach is given to describe a few-nucleon system embedded in a nuclear medium.

The disappearance of bound states at increasing density because of Pauli blocking is of relevance for the properties of nuclear systems, for instance the structure of nuclei and the nuclear matter equation of state. Clustering is observed in light nuclei and at the surface of heavy nuclei. Examples are the Hoyle state of ^{12}C and the alpha decay of heavy elements. Cluster formation is observed in heavy ion collisions which can be used to probe the nuclear matter equation of state. Correlations and formation of light elements are essential for astrophysics, in particular supernova explosions and the structure of neutron stars.

**CYCLOTRON
COLLOQUIUM**

Dr. Gerd Röpke

Professor

Institut für Physik

**Universität
Rostock**

**CYCLOTRON
INSTITUTE**

Room 228

Refreshments will be
served at 3:30pm



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