

Cyclotron Colloquium, Tuesday, June 5, 2012, at 3:45 pm

Room MIST 102 at the Mitchell Institute

Refreshment will be served at 3:30 pm

Four-particle (alpha-like) correlations in nuclear systems

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Abstract:

Correlations are significant for the properties of nuclear systems at low densities and moderate temperatures. Continuum correlations, as well as bound state formation and quantum condensates are investigated in a systematic quantum statistical approach. In contrast to pairing that is well understood, quartetting is a new feature of low-density matter. Recent experimental results with heavy ion reactions at moderate energies are presented that show the Mott effect of light nuclei. The symmetry energy at low densities is obtained. Consequences of quartetting for nuclear structure are discussed. Few-nucleon correlations are of relevance in astrophysical processes like supernova explosions.