

Beta decay of deformed nuclei with the proton-neutron finite amplitude method

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In the last few years the finite amplitude method (FAM) has emerged as an efficient technique to calculate nuclear transitions. While formally equivalent to the quasiparticle random-phase approximation (QRPA), the FAM removes the need to construct and diagonalize the large Hamiltonian matrix usually required in the QRPA. As a result, calculations performed with the FAM are significantly faster than their QRPA counterparts, reducing computational burden and enabling larger-scale studies.

At UNC we have recently extended the FAM to calculate beta-decay rates and other charge-changing observables of axially-deformed even-even nuclei. In this talk I will review mean-field theory and the QRPA before discussing the finite amplitude method and its application to beta-decay rates important for r-process nucleosynthesis.

Monday

March 2

4 P.M.

Rm 124 NSH

Refreshments served prior to the seminar in Rm 124.