

Spin-triplet neutron-proton pairing and its observation

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Nuclei will form pair condensates of triplet pairs between neutron and protons in extremely large $N=Z$ nuclei, but outside the limits of the nuclear chart. This is the conclusion of a study by Luo and myself (Phys. Rev. C81 064320 (2010)) in a model study of pairing in large nuclei. In the first part of the talk, I will describe these calculations. Whether or not theory predicts the exotic pairing in nuclei that can be formed in the laboratory, it is interesting to look for it if the experimental tools have the required sensitivity. The second part of my talk will be to address sensitivity issues. Essentially, the variation in cross sections due to the presence or absence of exotic pairing should be larger than the variations due to effects of a more kinematic nature (Q -values, single-particle orbital characteristics, ...).

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