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(Zoom) Probing Nuclear Pairing with 2-Neutron Transfer Reactions

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The existence of a superconducting phase associated with the breaking of particle number conservation, has been first identified in metals in the context of the BCS theory. It was realized very soon that the underlying mechanism, connected with pairing correlations at work in the formation of Cooper pairs, bore great generality and was expected to be relevant for a large variety of fermionic systems. More specifically, its importance in nuclear structure was recognized just a few months after the seminal papers of Bardeen, Cooper, and Schrieffer, were published. Since that moment, the study of nuclear pairing has attracted much theoretical and experimental interest. Within this context, 2-neutrons transfer reactions have been the experimental method of choice for the quantitative probe of pairing correlations in nuclei. We want to address in this talk our theoretical understanding of 2-neutron transfer reactions, with a special emphasis on new perspectives associated with the current availability of high-intensity exotic beams.

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