



国立研究開発法人理化学研究所 仁科加速器科学研究センター  
第272回 RIBF核物理セミナー  
RIKEN Nishina Center for Accelerator Based Science  
The 272nd RIBF Nuclear Physics Seminar

Tin isotopes : Are they dull round nuclei ?

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I will present the picture of Sn isotopes obtained from recent studies by Monte Carlo Shell Model. This picture differs from the conventional one that the Sn isotopes, between  $N=50$  and  $82$ , are all spherical and are described by the condensate of isotropic Cooper pairs. Evidently, recent  $B(E2)$  measurements worldwide contradict this picture, but no systematic theoretical explanation was given before. We found that the  $Z=50$  magic structure is substantially broken in lighter Sn isotopes, and the unexpectedly large  $B(E2)$  values can be nicely reproduced. We further realized that the Sn isotopes undergo a 2nd order quantum phase transition around  $N=66$  from the modestly deformed phase to the spherical seniority phase. Thus, the Sn isotopes are not dull round nuclei, but provide us with a number of challenges and battle fields.

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RIBF Hall, RIBF bldg., RIKEN

\* The talk will be given in English language.

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