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## Isomeric Structure in $100\text{Sn}$ Region: Possible Competition between $\beta^+$ Decay and Proton Emission in Isomeric Unbound Nucleus $97\text{Sn}$

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The isomeric structure and properties in proton-rich nuclides are crucial for determining the path of the rapid proton capture ( $rp$ )-process. For example, bound nuclei inside the dripline can have unbound isomeric states and change the  $rp$ -process pathway. The configuration interaction shell model (CISM) is used to investigate nuclei around the  $Z = N$  line at the south-west region of  $^{100}\text{Sn}$ . The excitation mechanism of  $1/2_1^-$  isomers is identified as dominated by exciting one nucleon in the  $1p_{1/2}$  orbit to the  $0g_{9/2}$  orbit. The study explores the decay properties of both the ground and isomeric states. Remarkably, competitive  $\beta^+$  decay and proton emission are predicted in the unbound  $1/2_1^-$  isomer of  $^{97}\text{Sn}$ , suggesting potential influences on the  $rp$ -process pathway.

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