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Nuclear structure studies with fast exotic beams

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Observations in exotic nuclei have demonstrated that the sequence and energy spacing of single-particle orbits is not as immutable as once thought: some of the familiar magic numbers disappear and new shell gaps develop. This talk will summarize some of the recent results on the changes of shell structure in the vicinity of neutron number $N = 28$ as probed with nucleon-removal reactions and inelastic scattering experiments at the NSCL. This work was supported in part by the National Science Foundation grant PHY-0110253.