

Study of proton decays of high-spin isomeric states of $N=Z$ nuclei below 100Sn

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Recent work at GSI has enabled us to obtain evidence for the $16+$ spin-gap isomer in ^{96}Cd via its beta decay to the $15+$ isomeric state in ^{96}Cd . However, large scale shell model calculations using the gds model space indicate that the state should also undergo beta-delayed proton decay. Our previous data did not have sufficient statistics to enable us to search for such decays. It is important to confirm the presence of such a decay mode, since it has implications for the GT strength and the purity of the wavefunction of the $16+$ state. In addition, we would also like to perform a dedicated reinvestigation of the proton decay modes of the $21+$ isomer in ^{94}Ag where one aim will be to search for firm evidence of fine structure in the single proton decay spectrum. We aim to study the decay modes of both the ground state and $7+$ isomer in this nucleus.

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