Abstract Submitted
for the DNP15 Meeting of
The American Physical Society

Structure of positive parity bands and observation of magnetic rotation in ^{108}Ag JASMINE SETHI, R. PALIT, Tata Institute of Fundamental Research, Colaba, Mumbai, 400 005, India — The interplay of nuclear forces among the neutron particles (holes) and proton holes (particles) in the odd-odd nuclei gives rise to a variety of shapes and hence novel modes of excitations. The odd-odd nuclei in the A $\sim$ 110 region have proton holes in the $g_{9/2}$ orbital and the neutron particles in the $h_{11/2}$ orbitals. A systematic study of shears mechanism in A $\sim$ 110 region indicates the presence of magnetic rotation (MR) phenomenon in Ag and In isotopes. Therefore, the structure of doubly odd ^{108}Ag nucleus was probed in two different reactions, i.e, ^{100}Mo(^{11}B, 4n)^{108}Ag at 39 MeV and ^{94}Zr(^{18}O, p3n)^{108}Ag at 72 MeV beam energies. The emitted γ-rays were detected using the Indian National Gamma Array (INGA) at TIFR, Mumbai. A significant number of new transitions and energy levels were identified [1]. Lifetime measurements, using the Doppler shift attenuation method, have been carried out for a positive parity dipole band. Tilted Axis Cranking (TAC) calculations have been performed for two positive parity dipole bands.

[1] J. Sethi, et al., Phys. Lett. B **725**, 85 (2013).

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Date submitted: 01 Jul 2015 Electronic form version 1.4