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Recent results from INGA and VENUS at VECC

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The Indian National Gamma Array (INGA), which moves between the three major accelerator centres in India, was recently setup at VECC, Kolkata. Moreover, a complementary horizontal array of clover detector, VENUS (VECC Nuclear Spectroscopy) array was also setup. Several experiments have been performed to study the medium and high spin states in nuclei with these two array using light ion (proton and alpha) as well as heavy-ion beams from the K-130 cyclotron at VECC. Though it has limitation to produce very high spin states, but the alpha beam has certain advantages on the study of nuclear structure. Among the nuclei studied, interesting results have been obtained for the heavy nuclei just below the $Z = 82$ shell closure, the structure of which are severely affected by presence of the intruder high-j proton and neutron orbitals. Extending our study on Tl nuclei, we have identified a transition from chirality in ^{194}Tl [1] to magnetic rotation in ^{195}Tl [2]. In the odd-proton nucleus, ^{183}Au , we have strong evidence of wobbling motion based on two high-j configurations, $h_{9/2}$ and $i_{13/2}$ [3]. The contrasting nature of the variation of the wobbling energies with spin in these two transverse wobbling bands were interpreted with a generalised picture of Frauendorf-Donau model [4]. Evidence of gamma vibration band and unfavoured long-axis rotation have been identified in the odd-neutron nucleus ^{187}Os [5]. The details of the experiments, results and interpretations will be presented in the conference.

References:

- [1] T. Roy et al., Phys. Lett. B782, 768 (2018).
- [2] S. Nandi et al., Phys. Rev. C 99, 054312 (2019)
- [3] S. Nandi et al., Phys. Rev. Lett. 125, 132501 (2020).
- [4] S. Frauendorf and F. Donau, Phys. Rev. C 89, 014322 (2014).
- [5] S. Nandi et al., in review (2021)

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