Search For Rare Shape-Phase Transition and GQR Decay in Hot Rotating Nuclei.

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This talks begins with a very brief discussion on the hot GDR decay studies, the primary goals, the paradigm and also the pitfalls. The material that follows presents our recent measurements of high energy gamma rays from hot rotating ^{188}Os nucleus. The measurements are part of an ongoing programme to search for a rare kind of shape phase transition in hot rotating nuclei. We will present the results of exclusive measurements of angular momentum gated high energy gamma rays from hot rotating ^{188}Os nucleus at two different beam energies. In addition we are also engaged in search of the Giant Quadrupole Resonance (GQR) based upon excited states in the compound nucleus. We will present clear evidence of a peak structure and excess gamma rays in the region of the GQR after very elaborate subtraction of the possible backgrounds. The efforts to carry out exclusive measurements have resulted in the setting up of a sum-spin spectrometer in complete 4π configuration. This presentation also reports about the performance of the spectrometer and the preliminary results on GDR decay from hot rotating ^{192}Pt nucleus using this spectrometer.