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Giant Dipole Resonance decay of hot rotating ^{88}Mo

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for the HECTOR and GARFIELD collaborations

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An experiment, using HECTOR and GARFIELD arrays, focusing on study the properties of hot and rotating compound nucleus ^{88}Mo was performed in LNL Legnaro using ^{48}Ti beam at energies of 300, 450 and 600 MeV on ^{40}Ca target. The compound nucleus was produced at temperatures of 3, 3.8 and 4.5 MeV, with angular momentum distribution with $l_{max} > 60$ ħ (i.e. close or exceeding the fission barrier).

High-energy gamma rays, measured in coincidence with evaporation residues and alpha particles, were analyzed with the statistical model. For the analysis the existing GEMINI++ [1] code was enhanced by adding possibility of GDR decay. The correctness of GEMINI++ input parameters which were used to parametrize the level density, the *Yrast* line (and by this deformation of the nucleus in function of angular momentum) was checked by calculating light charged-particle energy spectra and comparing them to the experimental data. Then, during fitting procedure the GDR parameters were obtained, which allowed to investigate an evolution of the GDR width up to high temperatures. Indications of the onset of the GDR width saturation and of the Jacobi shape transition were found. Comparison of experimental results with Lublin Strasbourg Drop model [2] and PDM [3] calculations will be discussed.

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