# Giant resonances in atomic nuclei: cases of the Isovector giant dipole resonance and the isoscalar giant monopole resonance for selected nuclei

Giant resonances (GRs) are elementary excitations of atomic nuclei. Experiments and modern microscopic model calculations have led to a better understanding of the various GR modes and the successful representation of their strengths and centroid energies as a function of the atomic mass number, A, based on the systematic study of stable nuclei across the periodic table. Inelastic proton scattering experiments at $E_p$ = 200 MeV and $0^o$ spectrometer angle allow for fine structure to be observed within the region of the resonance and hence allowing for important nuclear structure parameters to be extracted [1,2].

The recent development of radioactive ion beams and the advent of active target detector systems offer the opportunity to extend such studies to unstable nuclei. Inelastic scattering measurements carried out on $^{56}$Ni and $^{68}$Ni using the MAYA active target at GANIL show agreement with the systematics' predictions [3,4]. However, the angular and energy resolution constraints of the current day active targets' design limit the amount of nuclear structure information that can be extracted at the moment.

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[3] C. Monrozeau et al. Physical Review Letters 100 (2008) 042501
[4] M. Vandebrouck et al. Physical Review C 92 (2015) 024316