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Photon strength function studies at iThemba LABS – latest developments

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An incredible wealth of information can be obtained from investigations of the low-energy tail of the Giant Electric Dipole Resonance. The Photon Strength Function (PSF), which represents the ability of nuclear matter to absorb and emit photons, is one of the quantities that is used successfully to extract resonance features in the region of the quasi-continuum. The PSF is one of the input parameters for calculations of nuclear cross sections and reaction rates relevant to astrophysical processes which are invoked to explain the origin of elements heavier than iron.
In this talk I will focus on the experimental work to study the gamma-ray decay from the region of high-level density at iThemba LABS. In particular I will discuss the latest developments which include the world's first measurement using inverse kinematic reactions to study the PSF, as well as the significant enhancement of our experimental capabilities which will lay the foundation for future high-impact measurements.

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