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Low-lying dipole response of the $N = 84$ isotones ^{142}Ce and ^{144}Nd

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The Pygmy Dipole Resonance (PDR) is a low-energy excitation mode contributing to the electric dipole response in atomic nuclei. Despite significant theoretical and experimental progress over the past decades [1-3], its precise nature and origin are still under investigation. To clarify these open questions, systematic studies along isotopic and isotonic chains are essential. Such research has been performed near the $N = 82$ shell closure, focusing on the $N = 84$ isotones ^{144}Nd and ^{142}Ce . These nuclei were examined using Nuclear Resonance Fluorescence (NRF), a method based on real-photon scattering. Due to their low angular momentum transfer, photons are particularly well suited for studying the PDR [4]. This contribution presents and compares NRF data obtained for ^{144}Nd and ^{142}Ce . Supported by the DFG (ZI510/10-2).

References

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