Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Internal Webinar

High resolution spectroscopy in a single trapped Ba+ ion

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High resolution spectroscopic measurements in trapped and laser cooled simple alkaline earth ionic systems like Ba^+ are indispensable towards precise measurement of weak interactions like search for Atomic Parity Violation (APV) in atomic systems. In this research work, a single Ba^+ ion experiment was constructed and the frequency stabilisation techniques for the laser systems were implemented. The accuracy of the knowledge of the atomic structure of Ba^+ depends on certain spectroscopic measurements like lifetime of the long lived metastable $5d^2D_{5/2}$ state, level energies and light shifts in the presence of the additional laser field in a single Ba^+ ion.

Tuesday, Jan 13th 2026

11:30 Hrs