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Measurement of the quadrupole moment of the first 2^+ state in 110Sn

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The quadrupole moment of the 2⁺₁ state in ¹¹⁰Sn has been determined, along with a more precise determination of the reduced transition probability B(E2;2⁺₁ -> 0⁺₁). The measurement results were obtained through a safe Coulomb excitation experiment at HIE-ISOLDE, using the Miniball setup. Preliminary results yield Q(2⁺₁) = 0.19(7) eb, and B(E2;2⁺₁⟶0⁺₁) = 462(19) e²fm⁴. A novel analysis approach combining GOSIA and GOSIA2 codes with a DSAM measurement was used to calculate both diagonal and transitional matrix elements. The preliminary results are consistent with recent theoretical predictions, and the reduced transition probability, determined with high precision, aligns with previous experimental studies.

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