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Investigating Structures in 124Te via Coulomb Excitation

Friday 11 July 2025 09:00 (20 minutes)

We propose to perform Coulomb excitation using a ^{58}Ni beam on a ^{124}Te target using the combination of the AGATA and SPIDER detector arrays. Sufficient yields of γ rays will be obtained that will enable us to meet the following goals:
- Determine the spectroscopic quadrupole moments of the 2_1^+, 2_2^+, and 4_1^+ states;
- Determine the matrix elements for the $4_2^+ \rightarrow 4_1^+$, $4_2^+ \rightarrow 2_2^+$, $0_3^+ \rightarrow 2_2^+$, and perhaps the $0_4^+ \rightarrow 2_2^+$ transitions;
- Determine the $\langle \cos 3\delta \rangle$ value for the 0_1^+ state;
- Determine the $\langle Q^2 \rangle$ value for the 0_2^+ state.

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