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## Establishment of the Exact Quantum Numbers of Critical Rotational Bands in Gd-155

Excited states in  $^{155}\text{Gd}$  nuclei were populated in the  $^{154}\text{Sm}(\alpha, 3n)$  reaction at a beam energy of 33MeV. The aim is to establish firm spin and parity assignments for the many complex rotational bands that have been observed in this nucleus and to observe which couplings are blocked by which quasi-neutrons in order to establish the underlying microstructure of the collective excitations of the  $^{154}\text{Gd}$  core.

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