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Identification of levels in ^{159}Sm and high spin states in ^{157}Sm and ^{89,91}Kr[1] JAE-KWANG HWANG, A.V. RAMAYYA, J.H. HAMILTON, K. LI, C. GOODIN, Vanderbilt University, Y.X. LUO, Vanderbilt Univ./LBNL, J.O. RASMUSSEN, LBNL, S.J. ZHU, Tsinghua University — The high spin excited states of neutron-rich nuclei ^{157,159}Sm and ^{89,91}Kr were identified for the first time from the spontaneous fission of ^{252}Cf. Six excited states and six gamma transitions in ^{159}Sm are reported here for the first time. Four, five, and two new gamma transitions were identified in ^{157}Sm, ^{89}Kr, and ^{91}Kr, respectively. Level schemes in ^{89,91}Kr are interpreted as the $2d_{5/2}$ neutron hole configuration weakly coupled to the neighboring even-even Kr nuclei. Yrast spin sequences of $11/2^-$ - $9/2^+$ - $5/2^+$ is observed in ^{89,91}Kr. Rotational bands are identified in ^{157}Sm and ^{159}Sm with the proposed configurations of $\nu 5/2[523]$ and $\nu 3/2[521]$, respectively.

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