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High Spin States in $^{139,140,142}\text{Cs}$ SHAOHUA LIU, J.H. HAMILTON, A.V. RAMAYYA, J.K. HWANG, Vanderbilt University, Y.X. LUO, J.O. RASMUSSEN, Lawrence Berkeley National Laboratory, S.J. ZHU, Tsinghua University — The high spin excited states of neutron-rich nuclei $^{139,140,142}\text{Cs}$ are investigated from a study of the prompt γ rays emitted in spontaneous fission of ^{252}Cf with the Gammasphere detector array. Eight new γ transitions and a new side band in ^{139}Cs are observed here. Seven new γ transitions, involving two new levels at lower spins and one at high spins, in ^{140}Cs are identified. The level scheme of ^{142}Cs is rebuilt and eleven new γ transitions, one new side band and four low energy transitions in ^{142}Cs are observed here. Angular correlation measurements are planned to confirm or assign the spins of levels in these three nuclei. Theoretical calculations are needed to interpret the new observed structures of $^{140,142}\text{Cs}$.

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