Abstract Submitted
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Fission Barrier of ^{254}No at High Spin[1] G. HENNING, Argonne & CSNSM, T.L. KHOO, D. SEWERYNIAK, B.B. BACK, P.F. BERTONE, M.P. CARPENTER, J.P. GREENE, G. GÜRDAL, C.R. HOFFMAN, R.V.F. JANSSENS, B.P. KAY, F.G. KONDEV, T. LAURITSEN, C.J. LISTER, E.A. MC-CUTCHAN, C. NAIR, A.M. ROGERS, S. ZHU, Argonne, C.J. CHIARA, Argonne & U. Maryland, K. HAUSCHILD, A. LOPEZ-MARTENS, CSNSM & U.Jyvaskyla, A. HEINZ, WNSL, Yale, J. PIOT, U. Strasbourg, P. CHOWDHURY, S. LAKSHMI, U. Mass. Lowell — Superheavy nuclei provide opportunities to study nuclear structure at the limits in charge, spin and excitation energy. These nuclei exist only because shell effects create a fission barrier B_f. Hence, it is important to determine B_f and its spin dependence. For ^{254}No, the maximum spin and energy were found [1] to be $I_{max} = 22\hbar$ and $E^* = 8$ MeV in the reaction ^{208}Pb(^{48}Ca,2n) at a beam energy of 219 MeV. At 223 MeV, the maximum spin increases to $32\hbar$. In contrast, the spin in ^{220}Th, produced [2] in the ^{176}Yb(^{48}Ca,4n) reaction at 206 and 219 MeV, saturates at $20\hbar$. A measurement of the entry distribution of ^{254}No at 223 MeV has been performed to determine $B_f(I)$ and results will be reported.

[1] P. Reiter *et al.*, Phys. Rev. Lett. 84, 3542 (2000).
[2] A. Heinz *et al.*, Nucl. Phys. A682, 458c (2001)

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