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Study of the evolution of deformation and collectivity in tungsten isotopes through lifetime measurements in 190W

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The N=116 chain from Z=78 towards Z=70 shows a clear indication of unexpected nuclear shape behavior. The drop of the 4^+ to 2^+ excitation energy ratio, $E(4^+)/E(2^+)$ seen from ^{190}Os to ^{190}W doesn't follow the systematic expectations in the neighboring nuclei. Experimental and theoretical efforts have been made to understand the structure of ^{190}W that remains mostly unexplained. The lifetime of the 4^+ state in ^{190}W will provide relevant information on the collectivity of this state and an insight into the nuclear structure in this mass region.

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