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High-spin states in neutron-rich Nb isotopes near the line of stability N. FOTIADES, LANL, J.A. CIZEWSKI, Rutgers, R. KRÜCKEN, T.U.Munich, R.M. CLARK, P. FALLON, I.Y. LEE, A.O. MACCHIAVELLI, LBNL, W. YOUNES, LLNL — The study of nuclei with a few valence particles outside the subshell closure nucleus of $^{96}\text{Zr}_{56}$ is interesting due to the rapid changes observed in their level structures. The addition of only four neutrons introduces considerable deformation and the addition of an extra proton in the neighboring Nb isotopes located close to the line of stability is likely to enhance this rapid change. We have recently established high-spin states in ^{97}Nb [1] by studying this nucleus as a fission fragment produced in heavy-ion induced reactions. The level pattern observed in ^{97}Nb follows closely that of ^{96}Zr . Next in the sequence of the odd-mass Nb isotopes is ^{99}Nb for which only low-spin states ($< 9/2$ ground state) are known. High-spin states in heavier odd-mass Nb isotopes have been studied [2] as actinide fission fragments, so ^{99}Nb is the missing link in the systematics of high-spin states between the neutron-deficient and neutron-rich odd-mass Nb isotopes. Preliminary results on high-spin states in ^{99}Nb studied as a fission fragment will be presented together with results in ^{97}Nb . A comparison with excited states in neighboring $N=56$ and $N=58$ isotones will be discussed. This work was supported by the U.S. Department of Energy and the National Science Foundation. [1] N. Fotiades, *et al.*, Phys. Rev. C **82**, 044306 (2010). [2] Y. X. Luo, *et al.*, J. Phys. G **31**, 1303 (2005).

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