Gamma spectroscopy of neutron-rich isotopes in the $A = 100$ region produced in fission induced by cold neutrons with the new FIPPS array.


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The phenomenon of sudden onset of the deformation in nuclei around $A = 100, N = 60$ is considered the most dramatic shape change in the nuclear chart. We have investigated the structures of the neutron-rich Y isotopes produced in the fission of $^{235}\text{U}$ active target induced by cold neutrons from the reactor at ILL. The level schemes of $^{92,94,96}\text{Y}$ nuclei have been established based on gamma-ray coincidences measured with the highly efficient HPGe array called FIPPS. The new results suggest that deformed structures appear just after the subshell closure at $N = 56$ and evolve smoothly when passing through $N = 57 - 59$ isotopes, to become the ground state structure at $N = 60$. 