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Decay spectroscopy of exotic fission products¹

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The beta decay studies of exotic fission products have been performed at the Holifield Radioactive Ion Beam Facility (HRIBF) at Oak Ridge National Laboratory. The scientific program was focused on the beta-strength function measurements and resulting new half-lives [1,2] and beta-delayed neutron properties. These observables are important for nuclear structure analysis and modeling of the nucleosynthesis within rapid neutron capture process. The highlights include ten new beta half-lives and several Pn branching ratios including an observation of beta-delayed two-neutron emitter ^{86}Ga [2]. In addition, the measurements of the beta-strength within beta-gamma emission window were performed using a Modular Total Absorption Spectrometer for 22 fission products. These MTAS results are also important for the analysis of reactor anti-neutrino anomaly.

[1] M. Madurga et al., Phys. Rev. Lett. 109, 112501, 2012.

[2] C. Mazzocchi et al., Phys. Rev. C 87, 034315, 2013.

[3] K. Miernik et al., Phys. Rev. Lett. 111,132502,2013.

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