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## Present and future of JURO-spectroscopy at JYFL

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The interplay between single-particle motion, collectivity and pairing in nuclei is seen as a rich tapestry of exotic excitations when systematic spectroscopic studies are extended to nuclei at the extremes of neutron and proton numbers. Excited states of nuclei at the proton drip line and in the region of super-heavy elements can be populated in fusion-evaporation reactions with stable-ion beams available from the JYFL accelerator system.

Coupling of various spectrometer systems to the RITU gas-filled recoil separator at JYFL has enabled the first observation of excited states in 57 very-neutron deficient and heavy nuclei. Detailed nuclear structure studies have been carried out in nuclei with mass numbers from around 70 to 255. In these studies the backbone in gamma-ray detection is formed by former Euroball detectors. The present JUROGAM II array is comprised of 24 Eurogam Clovers and 15 Eurogam Phase 1 or Gasp detectors (eff. 6.2% at 1.3 MeV). Fully-digital electronics and TDR acquisition allow higher counting rates to be used.

Research highlights and future perspectives for lowering the spectroscopic limit in various types of tagging experiments at the upgraded JYFL accelerator laboratory will be discussed.

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