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# Nuclear masses for nuclear structure and astrophysics

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Nuclear masses reflect sensitively changes in nuclear structure, such as shell closures, pairing effects or onset of deformation. The masses are also one of the key inputs for nuclear astrophysics, and structural changes are reflected in the calculations. The recent observation of GW170817 [1] from a merger of two neutron stars and the associated kilonova manifested that a broad range of elements heavier than iron can be produced at least in this kind of mergers via rapid neutron capture process, the r process. It has been shown [2] that uncertainties in nuclear masses and fission properties need to be reduced in order to better constrain the role of neutron star mergers on the chemical evolution of r-process elements using LIGO/Virgo's detections. In this contribution, I will review the current status of nuclear mass measurements for nuclear structure and astrophysics with an emphasis on the r process.

**Presenter:** Dr KANKAINEN, Anu (University of Jyväskylä)

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