



# TASCA 18

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## **MRTOF Mass measurements at RIBF: Recent measurements of heavy isotopes and future plans for the super-heavy region**

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Within the SHE-mass collaboration of RIKEN and KEK, first mass measurements of Md isotopes [1] and many other radioactive species like Ac/Ra isotopes [2] have been performed using a multi-reflection time-of-flight spectrograph (MRTOF-MS) [3]. After these successful experiments, the MRTOF-MS has changed the location behind RIKEN's RRC accelerator. Our new aim is, to determine the masses and atomic numbers of  $^{284}\text{Nh}$  and  $^{288}\text{Mc}$  for the first time, which are isotopes in the SHE region disconnected from well-known isotopes by the dominance of spontaneous fission. Furthermore, new MRTOF-MS devices are planned to perform mass measurements of the most exotic species produced at RIKEN. Those devices will be placed in various locations as behind RIKEN's zero-degree spectrometer for accessing exotic nuclides in symbiotic operation with other experiment. In this contribution, an overview of the actual status and future plans for low-energy precision mass measurements will be discussed.

### **References**

- [1] Y. Ito et al., Phys. Rev. Lett. 120, 152501 (2018)
- [2] M. Rosenbusch et al., Phys. Rev. C **97**, 064306 (2018)
- [3] P. Schury et al., Nucl. Instr. Meth. B 335, 39 (2014)