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TITANs multiple-reflection time-of-flight isobar separator MORITZ PASCAL REITER, TRIUMF, JLU, TITAN COLLABORATION — At the ISAC facility located at TRIUMF exotic nuclei are produced by the ISOL method. Exotic nuclei are separated by a magnetic separator and transported to TRIUMFs Ion Trap for Atomic and Nuclear science (TITAN). TITAN is a system of multiple ion traps for high precision mass measurements and in-trap decay spectroscopy. Although ISAC can deliver some of the highest yields for even many of the most exotic species many measurements suffer from a strong isobaric background. This background often prevents the high precision measurement of the species of interest. To overcome this limitation an additional isobar separator based on the Multiple-Reflection Time-Of-Flight Mass Spectrometry (MR-TOF-MS) technique has been developed for TITAN. Mass selection is achieved using dynamic re-trapping of the species of interest after a time-of-flight analysis in an electrostatic isochronous reflector system. Additionally the MR-TOF-MS will, on its own, enable mass measurements of very short-lived nuclides that are weakly produced. Being able to measure all isobars of a given mass number at the same time the MR-TOF-MS can be used for beam diagnostics or determination of beam compositions. Results from the offline commissioning showing mass resolving power and separation power will be presented.

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