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Fission of actinide nuclei using multi-nucleon transfer reactions[1]
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We are promoting a campaign to measure fission-fragment mass distributions for neutron-rich actinide nuclei populated by transfer reactions from their ground state up to an excitation energy of several tens MeV. We thus obtain the excitation energy dependence of the mass distribution. The experiment was carried out at the 20 MV JAEA tandem facility at Tokai. We report on the data obtained in the direct reaction $^{18}O +^{232} Th$. Transfer-channels and excitation energies of the fissioning nuclei were identified using silicon dE-E detectors located at forward angle. Two fission fragments were detected in coincidence using multi-wire proportional counters. Fission fragment masses were determined by kinematic consideration. We obtained the fission fragment mass distributions for 13 nuclei from actinium to uranium and some fission barrier heights.

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