Preliminary results of the cross section measurement of the ^{235}U(n,f) reaction relative to the ^{10}B(n,a) reaction at the CERN n_TOF facility

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A widely implemented technique in neutron cross section measurements is studying the cross section relative to a neutron standard, which highlights the need for neutron cross-section standards with high accuracy. A widely used reference reaction is the neutron induced fission cross-section of ^{235}U at the thermal point, and in the energy regions 7.8 to 11 eV and 0.15 to 200 MeV. Additional high accuracy cross-section data of this reaction can assist in the improvement of the standard as well as to extend its energy region.

In this work, a preliminary study of the ^{235}U(n,f) cross-section is presented, relative to the ^{10}B(n,a) reaction. The measurement was performed at the experimental area EAR-1 of the n_TOF facility, located at CERN. The targets were produced at JRC-Geel in Belgium, while the detection of the fission fragments as well as the a-particles was achieved with the Micromegas gas detector.

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