



Contribution ID: 85

Type: **Poster**

The use of artificial neural networks for the unfolding procedures in neutron activation measurements

Tuesday 9 April 2024 18:30 (20 minutes)

A method called NAXSUN was developed to measure the effective neutron cross-sections of induced nuclear reactions [1,2,3]. It is based on irradiating multiple samples with energy-wide neutron fluxes and measuring the saturation activity using gamma spectroscopy. Cross section values are then obtained using unfolding techniques. So far, we have used SANDII, GRAVEL and MAXED algorithms for that purpose [4,5,6]. In this work, we used artificial neural networks for the unfolding procedure. Here we will present the obtained results, which were tested on the example of measurement of neutron-induced reactions on indium.

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Session Classification: Posters

Track Classification: MLC