Contribution ID: **16**   Type: **Keynote**

Neutron inelastic scattering

Tuesday, 9 July 2024 14:25 (50 minutes)

Neutron inelastic scattering is an important process involved in many applications but also for background studies supporting more fundamental research area. In the fast energy range, it is one of the major nucleon-nucleus interactions and its cross section constantly increases above the threshold energy of the first excited state up to a few MeV. In the field of nuclear energy applications or security and safeguard purposes, accurate nuclear data are required. However, despite significant advances in modeling and experimental efforts, using different experimental techniques, during these last decades, such cross section calculations still pose a major challenge to nuclear theory to reach predictions at the level of the required accuracy by applications.

In this context, this contribution will first present the issues linked to the current state of evaluated nuclear data in the particular field of nuclear energy. Then, the experimental effort made over more than 30 years will be compared to the progress made in modeling the neutron inelastic scattering. Indeed, as experimental information available for evaluating the inelastic scattering cross sections is rather limited (and often parcel), theoretical knowledge is needed to infer the total cross section.

The last part of the contribution will be devoted to evoking the possible future of this topic and challenges to tackle in view of providing accurate neutron inelastic cross section.

Primary author: KERVENO, Maëlle (CNRS/IPHC, Strasbourg)

Presenter: KERVENO, Maëlle (CNRS/IPHC, Strasbourg)

Session Classification: Measurements I

Track Classification: Measurements relevant to compound-nuclear reactions