

Fusion Neutron Diagnostics for Tokamak Plasma - from a plasma diagnostician perspective

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The presentation will provide a concise overview of neutron diagnostics and techniques used at modern tokamaks. Time resolved and time-integrated neutron measurement techniques will be presented and discussed. The principles of neutron spectroscopy techniques based on liquid organic scintillators will be also explained. The special emphasis will be put on the space- and time- resolved measurements (neutron camera). Tomographic inversion methods dedicated to the reconstruction from sparse data sets will be shown along with their applications. Several upgrade projects devoted to upcoming DT campaign will be also discussed. In the lecture, a problem of instruments calibration will be considered.

The lecture will give a general overview of tokamaks neutron diagnostics and can be treated as an introduction for more detailed presentations that will be given during the PhDiaFusion School 2017.

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