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## **EX/P6-27: Analysis of High Energy Neutral Particles Measured by CNPA and Comparison with Synthesized Fast Neutral Spectrum Based on TRANSP/FIDA for the NB Heated Plasmas in KSTAR**

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It is important to measure the fast ions accurately in tokamak plasmas since it represents the ion heating by NB/ICRF and it is a basis for the evaluation of the fast ion induced instabilities, transport, and neutron generation. A CNPA (Compact Neutral Particle Analyzer) based on Si-diode is an effective way to infer the fast ion distribution function by comparing with synthetic diagnostic data [1-4]. TRANSP code with NUBEAM module can generate fast ion distribution function by using measured plasma parameters such as density, temperature profiles [5]. FIDA/NPA code can synthesize the fast neutral particle spectrum through Monte Carlo (MC) simulation by using the output of TRANSP [6]. In this study, the high energy neutral particle spectrum is analyzed for NB heated plasmas in KSTAR and compared with the numerical result by using the TRANSP /FIDA codes.

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### **Collaboration (if applicable, e.g., International Tokamak Physics Activities)**

KSTAR team

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