Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Interaction of fast ion beam with plasma turbulence in the TORPEX simple magnetized toroidal plasma[1] GENNADY PLYUSHCHEV, AMBROGIO FASOLI, IVO FURNO, BENOIT LABIT, PAOLO RICCI, CHRISTIAN THEILER, CRPP-EPFL, Association EURATOM - Confédération Suisse, CH-1015 Lausanne, Switzerland, TORPEX TEAM — An important question, related to burning plasma physics, is how fast ions interact with low frequency plasma turbulence. To address this question on TORPEX a miniaturized Li-6 ion source with relatively low ion energy (100eV-1keV) is used. The source is mounted on a 2D poloidally moving system inside the vacuum vessel. The energy and current density profile of the ion beam are completely characterized using a 2D movable gridded energy analyzer. The generation and measurements of the beam is carried out in hydrogen plasma at two plasma regions: in the main plasma region, where the plasma is produced by ECH and density fluctuations are dominated by coherent modes (interchange) and in the source free region with turbulent structures (blobs), which carries similarities to tokamaks SOLs. The changes of fast ion beam properties in these two scenarios with respect to propagation in the vacuum are investigated for different fast ion beam energies.

[1]This work is partly supported by the Fonds National Suisse de la Recherche Scientifique.

Ambrogio Fasoli
CRPP-EPFL, Association EURATOM - Confédération Suisse,
CH-1015 Lausanne, Switzerland

Date submitted: 19 Jul 2008 Electronic form version 1.4