

Anomalous Transport during Alfvén Wave Injection in TCABR tokamak

C.Ribeiro, †H. Figueiredo, †C. Silva

Departamento de Física, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa Campus da Caparica, 2829-516, Caparica, Portugal, e-mail: celso_ribeiro@hotmail.com

†Associação EURATOM/IST, Instituto de Plasmas e Fusão Nuclear, Lisboa, Portugal

Anomalous energy transport severely reduces the economical attractiveness of any possible fusion energy reactor based on magnetically confined thermonuclear plasma.

Therefore, to understand and control the major mechanisms of this transport, mainly due to the anomalous particles losses, is vital to ameliorate a potential fusion reactor scenario.

In this context, plasma edge is a key area of research in which considerable efforts are put into theory and experiments in auxiliary heated plasma confinement devices such as tokamaks.

The results reported here are a substantial extension of the preliminary data recently shown from the tokamak TCABR under auxiliary heating via Alfvén Waves (AW), in which the edge properties and its connection with global plasma parameters during the AW were presented [1].

Anomalous particle losses due to plasma density, electric field, and electron temperature fluctuations, all simultaneously measured with a triple Langmuir probe located in the scrap-off layer of TCABR, and its statistical properties will be presented.

[1] C. Ribeiro et al., *Edge Dynamics during Alfvén Wave injection into TCABR Plasmas*, 34th European Physical Society Conference on Controlled Fusion and plasma Physics, Warsaw, July 2-6, 2007 , (European Physical Society), 2007.