

Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Electron Bernstein Wave Heating in the TCV Tokamak ANJA MUECK, EPFL CRPP, HEINRICH P. LAQUA, IPP Greifswald, STEFANO CODA, BASIL DUVAL, TIMOTHY P. GOODMAN, IGOR KLIMANOV, YVES MARTIN, ANTOINE POCHELON, LAURIE PORTE, EPFL CRPP, CRPP TEAM — In high density plasmas, the O-mode wave cut-off can be overcome by the O-X-B mode conversion process. To optimize the O-X conversion and to achieve central Electron Bernstein Wave (EBW) absorption, a high density H-mode target plasma is developed with densities over $n_e = 1 \cdot 10^{20} \text{m}^{-3}$. Measurements of the variation in the Electron Cyclotron (EC) stray radiation with the EC injection angle will be shown. The measured angular window of the O-X conversion is in good agreement with the calculated size and position with the ART code. Further on, EBW heating experiments will be presented with modulated ECRH at the experimentally determined optimum angle with variations in the magnetic field and the modulation frequency. For the first time in an overdense plasma in a classical aspect ratio tokamak, heating with EBW via O-X-B mode conversion could be demonstrated and its localized deposition identified by cross-correlating the soft X-ray signal with the stray radiation signal.

A. Mueck is supported by a EURATOM fellowship.

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Date submitted: 20 Jul 2005

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