

Seminar

Institute for Plasma Research

- Title :** Neutral Beam Current Drive Experiments on ASDEX Upgrade– A Status Report
- Speaker :** Dr. Christian Hopf
Max Planck Institute for Plasma Physics,
Boltzmannstr.2, 85748, Garching bei Munich,
Germany
- Date :** 4th September 2014, Thursday
- Time :** 03.30 PM
- Venue :** Seminar Hall, IPR

Abstract:

ASDEX Upgrade is equipped with a powerful and versatile neutral beam injection system featuring among its eight beams also two tangentially oriented beams intended for off-axis neutral beam current drive. Neutral beam current drive (NBCD) investigations on ASDEX Upgrade hence have a long history. While earlier studies showed good agreement of the total driven current with predictions, later results focussing on the radial profile of the off-axis driven current were contradictory: On the one hand side the current profile appeared to be much broader than neo-classically expected, and this result that was explained by anomalous fast ion diffusion due to microturbulence. On the other hand side, the radial location of the slowing-down fast ions agreed perfectly with neoclassical theory in similar discharges. In the ongoing 2014 campaign a new effort was started to resolve this contradiction.

The talk will give a short introduction to NBCD, present an overview of the neutral beam heating and current drive system and the related diagnostics equipment of ASDEX Upgrade, briefly review the history of NBCD studies on ASDEX Upgrade, and present the first results and preliminary conclusions obtained in the ongoing 2014 campaign.
