



Contribution ID: 18

Type: Poster

Characterization of the Plasma in SPIDER using a Cs-H Collisional Radiative model

Thursday 6 October 2022 09:15 (8 minutes)

SPIDER (Source for the Production of Ions of Deuterium Extracted from a Radio frequency plasma), hosted at the Neutral Beam Test Facility (NBTF) in Padova, Italy, is the full scale prototype for the ITER Heating Neutral Beam (HNB) source.

A collisional radiative model for caesium-hydrogen plasmas was recently developed. When used in conjunction with measurements from Optical Emission Spectroscopy, Laser Absorption Spectroscopy and electrostatic probes, the model can provide estimates of the plasma parameters with a good spatial resolution thanks to the many lines of sight available.

This work presents a characterization of the plasma in SPIDER with this method during the first experimental campaign with caesium. In particular, we investigate the influence of the source biases and the direction of the magnetic filter field on the plasma properties, and compare the results with those of other source and beam diagnostics.

Primary author: POURADIER DUTEIL, Basile

Co-authors: POGGI, Carlo (Consorzio RFX); UGOLETTI, Margherita (University of Padua); SARTORI, emanuele (unipd)

Presenter: POURADIER DUTEIL, Basile

Session Classification: Poster Session 2

Track Classification: 9, Plasma and negative ion diagnostics