

HTPD 2018



Contribution ID : 378

Type : not specified

2.53 Design of a Custom Insertable Probe Platform for Measurements of C-2W Inner Divertor Plasma Parameters

Monday, 16 April 2018 10:46 (120)

A custom motor controlled probe system has been designed to make spatially resolved measurements of temperature, density, flow, and plasma potential in the C-2W inner divertors. Measurements in the inner divertors, which have a radius of 1.7 m and are located on either end of the confinement vessel, are critical in order to gauge exactly how local settings affect the plasma conditions, confinement, and stability in the FRC core. The inner Divertor Insertable Probe Platform (iDIPP) system consists of a custom motor controlled linear rack and pinion transporter that has a 1.9 m travel length in order to reach the center of the divertor. Mounted to the end of the transporter is a 1 m long segmented probe shaft made of individually floating stainless steel rings to prevent shorting out the electrode plates, which are biased up to 5 kV/m. A variety of interchangeable probe tips, including a triple Langmuir probe, a baffled probe, and a Gundestrup probe, can be easily plugged into the end of the probe shaft. Custom UHV coiled cabling comprised of 9 shielded conductors expands/retracts with the motion of the transporter in/out of the divertor. Details of the design of the iDIPP system and initial measurements of plasma parameters in the C-2W inner divertor will be discussed.

Primary author(s) : DUBOIS, Ami M. (TAE Technologies, Inc.)

Co-author(s) : SOKOLOV, Vladimir (TAE Technologies, Inc.); KNAPP, Kurt (TAE Technologies, Inc.); THOMPSON, Matt C. (TAE Technologies, Inc.); TAE TEAM, The (TAE Technologies, Inc.)

Presenter(s) : DUBOIS, Ami M. (TAE Technologies, Inc.); SOKOLOV, Vladimir (TAE Technologies, Inc.); KNAPP, Kurt (TAE Technologies, Inc.); THOMPSON, Matt C. (TAE Technologies, Inc.); TAE TEAM, The (TAE Technologies, Inc.)

Session Classification : Session #2, Monday Morning Poster Session