

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Analysis and design of ICRF antennas for cylindrical plasmas with TOPCYL SAUL GUADAMUZ, RICCARDO MAGGIORA, Politecnico di Torino, Department of Electronics, Italy — On recent years TOPICA[1] has shown its capabilities as a designing and predicting tool for ICRF antennas on tokamaks, handling at the same time realistic geometrical detail of the structure as well as a complete description of the plasma region. Now, expanding these capabilities, the TORino POLitecnico CYLindrical (TOPCYL) code has been released in order to give a full wave simulation of ICRF antennas in front of cylindrical plasma columns, thus inheriting from TOPICA the geometrical accuracy and keeping the completeness of the specific plasma model. This feature allows the analysis and design of RF heating systems for specific applications as plasma thrusters and plasma-surface-interaction experiments; nevertheless in general the only requirement is for the plasma to be cylindrical. In the present work, the theoretical basis, the implementation and validation of TOPCYL is presented.

[1] Nucl. Fusion, 46 (2006) S476.

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Date submitted: 22 Jul 2010

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