

Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Mitigation of RF potentials by an appropriate antenna design using TOPICA DANIELE MILANESIO, RICCARDO MAGGIORA, Politecnico di Torino, Department of Electronics, Italy — The final goal of this work is to set a list of rules to design a new Ion Cyclotron (IC) launcher with the aim to mitigate the RF potential generated by the antenna and its surroundings; to achieve this challenging task, we will adopt as our main tool the TOPICA code [1]. One peculiarity of the code is the capability to compute the accurate electric field map everywhere inside the antenna and the plasma regions; in fact, in this specific task, we are interested in finding a geometrical solution that mitigates the RF potentials and the precise knowledge of the electric field distribution close to conductors is essential to properly optimize the antenna geometry. The tasks of this work consist of the analysis of alternative innovative solutions taking advantage of all the crucial features of the TOPICA analysis tool namely the possibility to simulate the full 3D antenna geometry and the possibility to account for an accurate plasma model in front of the antenna. These solutions will exploit all the possible features in order to minimize the generated RF potentials.

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

Daniele Milanesio
Politecnico di Torino, Department of Electronics, Italy

Date submitted: 22 Jul 2010

Electronic form version 1.4