MODELING ECRIS USING A 1D MULTIFLUID

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Abstract

The Department of Experimental and Applied Physics (IEAP) at the University of Kiel (CAU Kiel) is establishing a solar wind laboratory for the calibration of space instrumentation. The main item of this facility is a 11GHz (Plateau) ECR ion source. It can be operated at two different radial magnetic confinements, using a set of permanent magnets in either hexapole or dodekapole arrangement. While beam focussing by moving the extraction along the beam line to match the ion beam into

the analysing magnet is well known, little is known about beam steering by moving the extraction in the plane perpendicular to the beam line. For the hexapole-configuration we will present our results about the feasibility of ion beam focussing and steering using a 3D-movable extraction. The beam profiles of these measurements will be recorded in comparatively high resolution with a Faraday cup array (see paper doi: 10.1063/1.3246787). This method will be shortly introduced within this talk, as well.

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