Planar Multipole Resonance Probe: A kinetic model based on a functional analytic description[1] MICHAEL FRIEDRICHS, Institute of Product and Process Innovation, Leuphana University Lneburg, RALF PETER BRINKMANN, Institute of Theoretical Electrical Engineering, Ruhr-University Bochum, JENS OBERRATH, Institute of Product and Process Innovation, Leuphana University Lneburg — Measuring plasma parameters, e.g. electron density and electron temperature, is an important procedure to verify the stability and behavior of a plasma process. For this purpose the multipole resonance probe (MRP) represents a satisfying solution. However, the influence of the probe on the plasma due to its physical presence makes it unattractive for processes in industrial applications. As an improvement the planar design of the MRP (pMRP) was introduced, which combines the advantages of the spherical MRP with the possibility to be integrated into the chamber wall of a plasma reactor. To measure the electron temperature with the pMRP, a kinetic model of the probe-plasma system is necessary. In this work such a kinetic model based on a functional analytic description will be presented.

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