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Analysis of spectra of the pMRP using a spectral kinetic model[1] MICHAEL FRIEDRICHS, South Westphalia University of Applied Sciences, JUNBO GONG, RALF PETER BRINKMANN, Ruhr-University Bochum, JENS OBERRATH, South Westphalia University of Applied Sciences — The planar multipole resonance probe (pMRP) is a diagnostic-tool based on the concept of active plasma resonance spectroscopy (APRS), which excites the plasma in the GHz range and records the response to detect resonances. Due to its planar design the pMRP is especially suited to monitor plasma processes without perturbing them. To determine plasma parameter from measured resonance, a model for the relation between plasma and resonance parameter is required. To allow for simultaneous measurement of electron density and temperature a kinetic model is necessary to determine a relationship between the electron temperature and the half width of the resonance peak. In this work a spectral kinetic approach in cylindrical coordinates- a particle simulation where the fields are calculated in the Fourier space by means of Bessel's functions - for the pMRP will be presented to analyze the influence of kinetic effects on the half-width.

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Michael Friedrichs
South Westphalia University of Applied Sciences

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