



## **Kinetic Spectra of the Planar Multipole Resonance Probe**

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*Published in:*

Bulletin of the American Physical Society

*Publication date:*

2018

*Document Version*

Publisher's PDF, also known as Version of record

[Link to publication](#)

*Citation for pulished version (APA):*

Friedrichs, M., & Oberrath, J. (2018). Kinetic Spectra of the Planar Multipole Resonance Probe. *Bulletin of the American Physical Society*, 2018, [TF3.00007]. <http://meetings.aps.org/Meeting/GEC18/Session/TF3.7>

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Abstract Submitted  
for the GEC18 Meeting of  
The American Physical Society

**Kinetic Spectra of the Planar Multipole Resonance Probe<sup>1</sup>**

MICHAEL FRIEDRICHS, Institute of Product and Process Innovation, Leuphana University, JENS OBERRATH, Institute of Product and Process Innovation, Leuphana University Lneburg, Germany — The planar multipole resonance probe is suitable for industrial plasma diagnostic purposes and consists of two half-disc electrodes, which can be integrated into the chamber wall of the reactor. Due to its minimal invasive character, inner plasma parameters can be monitored during the process. Based on a fluid model it is possible to determine the electron density from a detected resonance frequency in the measured spectrum. However, to monitor also the electron temperature an additional resonance parameter, e.g. the half-width of the resonance peak, is necessary. It is strongly influenced by kinetic effects, therefore a study of a kinetic model to obtain a relation between the half-width and the electron temperature is required. In this work such a kinetic model based on functional analytic methods and first spectra are presented.

<sup>1</sup>The authors gratefully acknowledge funding by the German Research Foundation (DFG) within the project OB 469/1-1

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Date submitted: 14 Jun 2018

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