

## Bachelorarbeit

# A spatially resolved model for the RF impedance at low pressure

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- **Inhalt:**

Capacitively coupled plasmas (CCPs) are of paramount importance for a wide range of plasma assisted technologies. CCP discharges are divided into two main zones, inductive plasma bulk and nonlinear capacitive plasma boundary sheath. As a result of a nonlinear interaction of these two zones higher harmonics of the driving frequency in the measured RF-current can be observed. This phenomenon is known as plasma series resonance. Furthermore the measured RF-current indicates a multi-mode characteristic which can be explained by the spatial extension of the plasma bulk. To reconstruct the multi-mode structure of the RF-current, a spatially resolved model for the RF-impedance of plasma bulk is needed.

- **Zielsetzung:**

- Calculation of RF-impedance of plasma bulk for a cylindrical geometry.
- Reconstruction of RF-current based on the fluid dynamic simulation

- **Anforderungen:**

- Basic knowledge of plasma technology
- Basic knowledge of Mathematica