

Abstract Submitted  
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**Electromagnetic PIC Simulations of VHF CCP discharges having cylindrical geometry**<sup>1</sup> DENIS EREMIN, FREDERICK SCHMIDT, Ruhr University Bochum — Following the needs of plasma processing industry, modern CCP reactors have much larger electrode radius compared to the older analogs to increase the processed area and often include a very high frequency harmonic in the driving spectrum in order to increase the ion flux. Both lead to emergence of new effects not known in the physics of smaller CCPs, such as the excitation of modes intrinsic to such plasma-filled reactors and modification of the field patterns due to the skin effect in high power regimes, which is typically connected to strong plasma nonuniformities. In this work we simulate these effects with a fully implicit energy-conserving electromagnetic PIC code in 2D (r,z) realistic cylindrical geometry and explore them in detail for several typical CCP regimes.

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