



# 偏微分方程及其应用中心

## 学术报告

**报告题目:** 2D Relativistic Vlasov-Maxwell System and the Magnetic Confinement

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**时间:** 2023.06.15(周四), 上午 10:00--11:00

**地点:** Zoom ID: 835 1550 9040, Key: 712983

**摘要:** This talk deals with the mathematical analysis of the magnetic confinement of the plasma via kinetic equations. We prove the global wellposedness of the Vlasov-Maxwell system in a two-dimensional annulus when a huge (but finite-in-time) external magnetic potential is imposed near the boundary. We assume that the solution is axisymmetric. The external magnetic potential well that we impose remains finite within a finite time interval and from that, we prove that the plasma never touches the boundary. In addition, we provide a sufficient condition on the magnitude of the external magnetic potential to guarantee that the plasma is confined in an annulus of the desired thickness which is slightly larger than the initial support. Our method uses the cylindrical coordinate forms of the Vlasov-Maxwell system. This is a joint-work with Robert M. Strain and Tak Kwong Wong.