

# Sheath properties and diagnostics in magnetized plasmas

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*Modeling and simulation are presented of both the ion sheath formation in front of a plane surface in contact with magnetized plasma and the new electrostatic analyzer. Experimental results on diagnostic of Tokamak plasma are presented.*

*Simulations of the ion sheath formation in front of a plane surface in contact with magnetized plasma show that electrostatic instabilities within hybrid frequency range might appear. An analytical model and simulation were made for new multi-channel analyzer proposed for measuring of the ion temperature perpendicular to the magnetic field. Katsumata and ball pen probe were used for measuring of both ion temperature and diffusion coefficient across magnetic field.*