

Abstract Submitted
for the DPP08 Meeting of
The American Physical Society

Comparison of the Characteristics of Striations Formed During Li Pellet Injection and Turbulent ExB Flows from the Gyro-Kinetic Simulation GYRO¹ BROCK BOSE, EARL MARMAR, MIT PSFC, DAVID MIKKELSEN, PPPL, MARTIN GREENWALD, MIT PSFC — Using an ultra high speed CCD camera, (frame rate up to 500 kHz) and a stereoscopic imaging system the detailed three dimensional evolution of striations formed in the ablation clouds of injected lithium pellets has been recorded on the Alcator C-Mod tokamak. The striations move primarily in the poloidal direction during the first 10 μ s after their formation and show distinctly different behaviors in ohmic L-mode plasmas and ICRH heated H-mode plasmas. During ohmic L-mode plasmas the direction in which the striations are emitted oscillates from the positive to negative ion diamagnetic direction over a radial scale of 10-20 ion gyro radii, and they move with speeds of up to 5 km/s. On the other hand, during ICRH heated H-mode plasmas the striations are predominantly emitted in the negative ion diamagnetic direction, again with speeds of up to 5 km/s. During the 2007 and 2008 campaigns the stereoscopic imaging system was employed to make a survey of the characteristics of striation trajectories in a variety of background plasmas. The characteristics, such as velocity distributions and the spatial scales of the striation trajectories are compared with simulated turbulent ExB flows from the non-linear gyro-kinetic solver GYRO.

¹Supported by USDoE award **DE-FC0299ER54512

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Date submitted: 18 Jul 2008

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