as MJ. Pueschel's abstract, ideally immediately before or after his contribution, his abstract is DPP16-2016-000541

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Electromagnetic turbulence and transport in increased β LAPD Plasmas GIOVANNI ROSSI, TROY CARTER, UCLA, MJ PUESCHEL, UW-Madison, FRANK JENKO, UCLA, PAUL TERRY, UW-Madison, DANIEL TOLD, UCLA — The new LaB6 plasma source in LAPD has enabled the production of magnetized, increased plasmas (up to 15%). We report on the modifications of pressure-gradient-driven turbulence and transport with increased plasma . Density fluctuations decrease with increasing while magnetic fluctuations increase. B fluctuations saturate while parallel (compressional) magnetic fluctuations increase continuously with β. At the highest β values B——/B 2 and B/B 1%. The measurements are consistent with the excitation of the Gradient-driven Drift Coupling (GDC). This instability prefers k—— = 0 and grows in finite β plasmas due to density and temperature gradients through the production of parallel magnetic field fluctuations and resulting B—— drifts. Comparisons between experimental measurements and theoretical predictions for the GDC will be shown. Direct measurements of electrostatic particle flux have been performed and show a strong reduction with increasing β. No evidence is found (e.g. density profile shape) of enhanced confinement, suggesting that other transport mechanisms are active. Preliminary measurements indicate that electromagnetic transport due to parallel magnetic field fluctuations at first increases with β but is subsequently suppressed at higher β values.

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