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Thomson Scattering Measurements on the ZaP Experiment R.P. GOLINGO, U. SHUMLAK, B.A. NELSON, D.J. DEN HARTOG, Aerospace and Energetics Research Program, University of Washington, THE ZAP TEAM TEAM — The ZaP Flow Z-Pinch Experiment is presently studying a magnetically confined plasma configuration that uses sheared flow to provide stability. During a quiescent period in the magnetic mode activity, a dense Z-pinch with a sheared flow is observed on the axis of the machine. The velocity shear agrees with the threshold predicted by linear theory. To better understand the potential of the concept more accurate equilibrium profiles are measured. A better comparison to theory can also be made knowing the pressure profile. A single point Thomson scattering system is presently being installed to directly measure the local electron temperature in the Z-pinch. The system has a 3 mm radial resolution and can collect scattered light up to 4 cm off of the axis of the machine. (The Z-pinch has a 1 cm characteristic radius.) The expected Thomson signal has been calculated to be 10 times the measured background radiation level. Initially the system will measure the electron temperature at a single point in the plasma. The design and hardware allow for the system to be upgraded to a multipoint Thomson scattering system which would measure the pressure profile of the Z-pinch. The design of the system and initial results will be presented.

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