

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Plasma dynamics and radiation properties of z-pinch formed within a conducting coil.¹ EDMUND WYNDHAM, MARIO FAVRE, PIA VALDIVIA, Pontificia Universidad Catolica de Chile, Departamento de Fisica, Casilla 306, Santiago 22 Chile — We present experimental observations on a z-pinch plasma formed within a conducting coil. The experiment aims to produce a single component x-ray emitting titanium plasma. The z-pinch is formed inside a thin wall titanium coil, which act as the load of a small pulsed power generator, with a nominal 150 kA, 120 ns pulse. The coil pitch is chosen so that the inductive impedance is high enough for the current path along the pinch axis to be preferred. A laser produced titanium plasma is injected from the cathode side, and pre-heated by an auxiliary hollow cathode discharge. The diagnostics include voltage and current, XRD, filtered and time resolved multi pin-hole images of the emitted x-ray plasma radiation, and time resolved XUV spectroscopy. It has been found that an axial titanium plasma column forms during the time scale of the current pulse, well detached from the inner wall of the coil. These observations will be complemented with measurements of the time evolution and spectral content of the titanium plasma radiation.

¹Funded by FONDECYT grant # 1060643

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Date submitted: 20 Jul 2006

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