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Direct measurements of neutral density depletion by two-photon absorption laser-induced fluorescence spectroscopy (TALIF) LAURENT LIARD, ANE AANESLAND, GARY LERAY, JACQUES JOLLY, PASCAL CHABERT, LPTP - CNRS, PRAGM TEAM — The neutral ground state density of xenon is measured by spatially resolved laser-induced fluorescence spectroscopy with two-photon excitation (TALIF) giving direct access to the neutral density depletion in high density plasmas. Significant neutral depletion is measured in the diffusion chamber of a magnetized, high density helicon reactor operated in xenon. The depletion at the centre of the core increases with increasing magnetic field, increasing rf power and decreasing fill pressure. The neutral depletion is due to the high electron pressure in the centre of the discharge which has been measured by Langmuir probe techniques. Temporal behaviour has also been studied both at ignition and extinction of the plasma.

Prefer Oral Session
 Prefer Poster Session

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