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Negative Triangularity Operation of LTX[1] DICK MAJESKI, Princeton Plasma Physics Laboratory, W. CAPECCHI, U Wisconsin, C. HANSEN, U. Washington — LTX-β, the upgrade to the Lithium Tokamak Experiment, is a high-field side limited, low aspect ratio tokamak (with R/a nominally 1.6). We have recently been exploring the use of a pair of poloidal field coils, which are internal to the vacuum vessel, but external to the lithium-coated liner system, to generate tokamak discharges with negative triangularity. Negative triangularity equilibria have several features which are of interest with low recycling walls, in LTX. Reduced drive for trapped electron modes, in combination with flat temperature profiles, may further reduce transport in a tokamak. While the collisionless scrape-off layer (SOL) in conventional, high field side limited discharges (with lithium walls) is expected to have a large, mirror trapped population, the SOL in negative triangularity discharges should have no trapped population. Diverted negative triangularity discharges may also be possible, while positive triangularity diverted discharges are not feasible in LTX, with the present coilset. Here we discuss possible negative triangularity equilibria which can be achieved with the LTX coilset. We will also briefly discuss some (speculative) implications for reactors.

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