Abstract Submitted
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Shifting the CFC/W transition point on the first ITER divertor target plates: equilibrium considerations[1] R.A. KOLESNIKOV, R.H. BULMER, L.L. LODESTRO, LLNL, T.A. CASPER, R.A. PITTS, ITER Organization — In the 2007 ITER Design Review, the CFC/W transition point on the first divertor target plates was lowered by 10 cm to allow some experience to be gained in the non-active phases of vertical target operation with strike points on W surfaces, in preparation for a full W divertor in the nuclear phase. For operation on W just above the transition point, we use the CORSICA code to investigate the range of possible H- and L-mode equilibria, with emphasis on the maximum plasma current, achievable shapes, etc. We then investigate the operational space as the transition is lowered still further (both L- and H-mode), while still ensuring sufficient carbon vertical target extent to fulfill the requirements of the non-active phase program. The primary aim of this study is to determine if the current transition point, which can still be modified within some range if required, is optimized with respect to gaining early operational experience on an all-metal target before the nuclear phases begin. In our previous work [1], we investigated the size of feasible β_p–li space for both reference and elevated strikes for operation at 14 MA (both L- and H-mode) as well as 12 MA (H-mode) currents. In this paper we present new results on the maximum achievable plasma current as a function of strikes locations. Also, we study plasma self-inductance, volt-second consumption and the vertical instability over the range of the new equilibria. [1] R.A. Kolesnikov, et al., 53^{rd} APS/DPP, Salt Lake City (2011)

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