

Abstract Submitted
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Shifting the CFC/W transition point on the first ITER divertor target plates: the effect on ITER plasmas¹ 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 ITER 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. In this work, we use the CORSICA code to investigate the range of possible H-mode equilibria with this lowered transition, with emphasis on the maximum 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 (e.g., operation at reference 15 MA currents). The primary aim of this feasibility/sensitivity 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. Also, we study how such equilibria affect the range of plasma self-inductance and volt-second consumption.

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