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ICRF Heating Scenarios for the Reduced Magnetic Field, Non-nuclear Phase of ITER[1] E.F. JAEGER, L.A. BERRY, Oak Ridge National Laboratory, P.U. LAMALLE, A. LOARTE, A. POLEVOI, ITER Organization, A. IVANOV, Keldysh Inst. of Appl. Math, RF SCIDAC TEAM — Radio frequency power in the ion cyclotron range of frequencies (ICRF) is one of three external heating sources planned for ITER. Previous full-wave simulations of high-power electromagnetic wave heating in ITER using the AORSA code [1] have concentrated on the burning plasma regime at full magnetic field and plasma current. Here, we consider instead the startup, non-nuclear phase of ITER. ASTRA modeled plasma profiles are assumed for hydrogen plasmas at 7.5 MA and 2.65 T with 3% minority He^3 ions. The 2^{nd} harmonic He^3 resonance occurs near the magnetic axis, while the fundamental H resonance occurs on the inboard edge. Three cases represent a good range of conditions to study the application of ICRF: 1) L-mode conditions before ICRF is applied and well away from the H-mode threshold, 2) L-mode conditions with ICRF approaching the H-mode threshold, and 3) fully developed H-mode with all power available.

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