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The Ignitor Experiment: Deuterium-Tritium Phase* A. AIROLDI, D. FARINA, IFP CNR, Milan, Italy, B. COPPI, M.I.T., F. BOMBARDA, G. CENACCHI, P. DETRAGIACHE, M. ROMANELLI, ENEA, Italy — The most ambitious phase of the scientific program of the Ignitor experiment involves Deuterium-Tritium plasmas with magnetic fields up 13 T and plasma current up 11 MA. In the burning plasma regimes envisaged, the control of the plasma evolution and the transition from ignited to sub-ignited discharges are of particular interest. Steady state, sub-ignited conditions are presented where the amount of injected heating, in the presence of sawtooth oscillations, is adjusted so as to compensate for different hypotheses on the thermal ion transport. The results point out that, by properly adjusting the RF injection, similar performances assessed by the ignition critical factor $I_f = P_\alpha/P_{loss}$ can be obtained. The confinement time is about 1.5 higher than that of the ITER97L scaling, during the steady state phase, in line with the results obtained by the FTU machine in the presence of ECRH, a heating process like that to be produced by the α–particles. Since the physics of transport and stability of fusion plasmas is not yet fully understood and Ignitor is expected to require short times to become productive, its construction will be highly beneficial to future large-scale experiments. Notice that $Q > 10$ ($Q = P_{fus}/P_{input}$) can easily be obtained in Ignitor on the basis of its design.
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Bruno Coppi
Coppi@psfc.mit.edu
M.I.T.

☐ Prefer Oral Session
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Special instructions: Ignitor poster session #2

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