

Abstract Submitted  
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**Ignitor Plasma Physics Performance in the H-Regime at Various Parameters**<sup>1</sup> P. DETRAGIACHE, ENEA, Italy, B. COPPI, MIT — The plasma physics performance of Ignitor at full ( $B_T = 13$  T,  $I_p = 10$  MA) as well as at reduced parameters ( $B_T = 8$  T,  $I_p = 5$  MA) in the high confinement mode (H-regime) is assessed using global 0-D modelling. At full parameters, high- $Q$  operation is possible if the heating power (a combination of Ohmic,  $\alpha$  and limited ICRF power) is above the threshold value  $P_{\text{thr}}$  for H-regime confinement. Different scaling expressions for  $P_{\text{thr}}$  yield significantly different results when used with Ignitor parameters. Even with the most pessimistic among the proposed scalings<sup>2</sup> the access to H-regime confinement is possible for Ignitor at full field when the ICRH system is operated at the highest frequency and the generated power is less than at lower frequencies. At reduced parameters, the lower  $P_{\text{thr}}$  and the augmented ICRF power available (about 10 MW) facilitate access to H-regime confinement, while the plasma performance remains respectable.

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<sup>2</sup>Y. R. Martin et al., *Journal of Physics: Conference Series*, **123**, 012033 (2008).

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