

Abstract Submitted
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Plasma-wall Interaction Analysis for the Ignitor Experiment* F. SUBBA, R. ZANINO, Politecnico di Torino, Italy, A. AIROLDI, IFP-CNR, Italy, F. BOMBARDA, G. MADDALUNO, ENEA, Italy — The thermal wall load on the first wall has been analysed for the set of plasma parameters that correspond to ignition. The “extended limiter” configuration of the Ignitor First Wall and the need to analyse the effect of possible off-nominal 3D configurations, does not allow standard edge plasma analysis techniques to be used, such as the B2 code. Thus, the development of a new 2D fluid edge plasma model¹ has been adopted to carry out an analysis² that has verified the low level of the peak heat flux (for the nominal configuration) finding it slightly larger than previous predicted analyses. The presence of a significant deposition localized at the inboard mid-plane plasma-wall tangency point, due to cross field diffusion, is also consistent with previous analyses, where the radial contributions to the heat load deposited onto the wall was introduced as an *ad hoc* hypothesis. A 3D analysis of the thermal loads during the start-up phase of the discharge is being undertaken together with a sensitivity study of the thermal loads obtained under different transport assumptions.

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¹F. Subba, R. Zanino, *et al.*, Bull. Am. Phys. Soc., **50** (8), 201 (2005).

²F. Subba, *et al.*, 17th Inter. Conf. on Plasma Surface Interactions in Cont. Fus. Devices, Hefei Anhui, China, May 22 - 26, 2006

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