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Effects of Preionization by Electron Cyclotron Heating in INTOR*

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Abstract

A model has been developed for the electron cyclotron heating (ECH) preionization and startup effects on the ISX-B tokamak. This model has satisfactory agreement with most of the observed phenomena on ISX-B. The model has been applied to INTOR under the assumption that sufficient power at a frequency commensurate with this device will be on hand. We have assumed the following parameters for INTOR: $R = 5.3$ m, $a = 1.52$ m, $B_t = 6$ T, and a maximum applied loop voltage of 35 V. The results suggest that moderate amounts of preionization will aid in the start up by allowing a reduction in the applied loop voltage, V_l , will save some transformer flux, and will permit a more rapid current ramp. Massive preionization (≥ 1 MW) does not appear to be necessary.

NOTICE

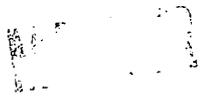
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