

Abstract Submitted
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Ignitor Duty Cycles and New Configuration of Magnet Cooling Channels¹ A. BIANCHI, Ansaldo, Italy, B. COPPI, M.I.T. — The duty cycles of the Ignitor machine depend mainly on the cooling time of the copper plates that are the conducting components of the toroidal magnet. Taking into account that the temperature propagates through a diffusion process a new configuration for the cooling channels has been devised that minimizes the distance between the region (adjacent to the central solenoid) where the maximum temperature is produced and the region that is reached by the coolant. At the same time the structural integrity of the magnet plates is maintained and the stress distribution in the so-called C-clamps that contain the toroidal magnet is improved by the new distribution of the cooling cavities within them. For the most extreme operation parameters considered the cooling time of 5 hours is reduced by about a factor 2.

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