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Design and optimization of cooling channels for 4-strap ICRF antenna of EAST

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In order to achieve high requirement of EAST Tokamak, ion cyclotron range of frequency(ICRF) heating is utilized as one of the main auxiliary heating methods, which plays an important role in the coupling RF power to the plasma. During the operation of ICRF, there will be a large amount of heat flux on the surface of antenna and consequently the structural stability and reliability of the antenna become worse. Therefore, the cooling channels of the ICRF antenna is designed based on the RF loss on the antenna, and optimization of the cooling channels is also finished by finite element method.

Eligible for student paper award?

Yes

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