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Preliminary progress of the divertor module in CFETR system code

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To develop the concept of China Fusion Engineering Test Reactor (CFETR), a system code for integrated simulation and optimization is being developed. It is a platform which provides the tools of Tokamak conceptual design and engineering analysis. Meanwhile, the detailed design models and corresponding analysis results would be stored in the data management system of this platform. The relevant data can be shared with the other modules in the platform. It contains information about constrains for each individual module and co-constrains among different modules, such as heat flux, electromagnetic force, spatial position and so on. In order to meet all requirements of every module and simplify the optimization processes of the design models, design workflows and engineering principles are set in the development of the system code. Therefore, every authorized engineer could get the up-to-date data associated with his own design module and submit the approved research and design result in this platform. It keeps the data synchronization update in the collaborative design of a fusion reactor for all the designers. This paper presents the development progress of the divertor module in CFETR system code and mainly focuses on normalization of the whole design workflow of the Tokamak divertor design and the correlative technical solutions. For the description of the CFETR system code diverter module, a simply design and analysis workflow also be presented.

Eligible for student paper award?

Yes

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