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Heat transfer coefficient calculation for analysis of ITER shield block using CFX and ANSYS

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ABSTRACT

In thermal–mechanical analysis of ITER shield block using ANSYS code, it needs the real heat transfer coefficient (HTC) values which are computed by CFX. Because two kinds of HTC values can be gotten from CFX and which has some difference with ANSYS, so it is necessary to estimate the error caused by HTC transferred from CFX to ANSYS. In this paper, HTC values got from CFX was firstly benchmarked with the results got from empirical formulas, then estimated the error caused by HTC transferred from theory and gave the expressions of the error, thirdly benchmark work of ANSYS results in 4 cases was done, then compared the error with former error estimated formula derived from theory. In the end, conclusions will be given based on above benchmark works.

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