Simulations and Data Science

A CFD NUMERICAL MODEL FOR THE FLOW DISTRIBUTION IN A MTR FUEL ELEMENT

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Previously, an instrumented dummy fuel element (DMPV-01), with the same geometric characteristics of a MTR fuel element, was designed and constructed for pressure drop and flow distribution measurement experiments at the IEA-R1 reactor core. This dummy element was also used to measure the flow distribution among the rectangular flow channels formed by element fuel plates. A CFD numerical model was developed to complement the studies. This work presents the proposed CFD model as well as a comparison between numerical and experimental results of flow rate distribution among the internal flow channels. Numerical results show that the model reproduces the experiments very well and can be used for the studies as a more convenient and complementary tool.

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