

## TRAC-P Simulation with a 1/7 scaled-down DVI experimental facility

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### Abstract

In the present study, several simulations using TRAC-P are carried out with a DVI experiment. The experimental facility is a rectangular channel type scaled down as 1/7 ratio of prototype reactor (APR1400). First, the effect of the nodal size is investigated. Two types of simulation works are performed: air/water simulations and steam/water simulations. In case of air/water simulations, it is possible to apply the fine nodal scheme to describe vessel component. TRAC-P shows a little bit higher bypass fractions in all cases. For steam/water simulations, as the fine nodal scheme causes a numerical convergence problem, a coarse nodal scheme is used in describing the node that connects the DVI water line and the reactor vessel. As a result, while TRAC-P shows discrepancies with the experimental data in bypass fractions, sweep-out water levels and drained liquid temperatures for steam/water simulations, it shows more similar results to them for air/water simulations. These results mainly come from the lack of capability of TRAC-P in prediction of condensation at low-pressure