

The present article covers the evaluation of the performance of twelve critical heat flux methods/correlations published in the open literature. The study concerns the simulation of an axially non-uniform heat flux distribution with the RELAP5 computer code in a single boilingwater reactor channel benchmark problem. The nodalization scheme employed for the considered particular geometry, as modelled in RELAP5 code, is described. For this purpose a review of critical heat flux models/correlations applicable to non-uniform axial heat profile is provided. Simulation results using the RELAP5 code and those obtained from our computer program, based on three type prediction methods such as local conditions, F-factor and boiling length average approaches were compared