

## **TRANSIENT SIMULATIONS FOR MULTIPLE PARALLEL CHANNELS WITH EVAPORATING FLUID**

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### **ABSTRACT**

Evaporating fluid in parallel pipes is associated with stability problems, multiple solutions and uneven flow distribution. Even for identical heating of all pipes mal distribution, which is an undesired phenomenon, may be the only stable solution.

Modelling the dynamic behavior of such systems is of great interest. It allows predicting the system response to changes in the operational conditions such as inlet flow rate and heating power. It is also essential for the design of a proper control for this complicated system. The transient model is based on the temporal local flow pattern in each pipe. The pipe is subdivided into numerical sections and the calculation of the local flow pattern and pressure drop in each cell is based on mechanistic modeling. Few examples of numerical transient simulations for a water/steam system flowing in 2, 3 and 4 parallel pipes are presented.

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