

## Modeling and Analysis of Pressure Drop Oscillations in Horizontal Boiling Flow

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### Abstract

In general, two-phase flow phenomena can be described based on the one-dimensional conservation laws. Models with different formulations can be obtained with different assumptions. This paper presents three models with different complexity to simulate pressure drop oscillations. The direct comparison indicates that there are substantial differences between these models. The mechanism of pressure drop oscillations is discussed and the effect of operating parameters on system instability is explored. It is shown that two bifurcation points can exist when varying heat input and inlet subcooling. Root locus analysis corroborates the simulation results.

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