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COMPREHENSIVE TWO-PHASE FLOW CALCULATION METHOD WITH IN-CHANNEL REFRIGERANT BOILING

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In this paper, the authors deal with the processes occurring during boiling of two-phase flows in channels, which differ in many possible regimes, and their analytical description is possible only under strict restrictions within the given regime and the application of empirical data. An approach is proposed in which it is recommended to use a map of flow regimes (boiling) in coordinates $\varphi - \lg Fr_m$ as an empirical component. The analysis of the process is carried out in the entire range of parameters — mass flow, temperature and pressure taking into account the change of flow regimes. The analytical dependencies presented form together a complete mathematical model, which is implemented in the form of a computer program.

Keywords: two-phase flows, in-channel boiling of refrigerants, true volumetric vapor content, flow regimes.

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