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FOURIER-KIRCHHOFF EQUATION FOR TWO-PHASE FLOW BOILING SOLVED WITH THE TREFFTZ METHOD

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The paper addresses the approximate solution of a heat transfer problem in a multi-layer region (three adjacent regions with different physical parameters each). We consider a direct problem in the first region, while inverse problems in the remaining two, [2]. Numerical calculations were performed using the experimental data for flow boiling of a refrigerant in a vertical rectangular minichannel, [4]. The governing energy equations were solved with the Trefftz method and allowed to determine two-dimensional temperature fields in the considered regions. Additionally, a thermal parameter (heat transfer coefficient) which characterizes the heat transfer between the liquid and the heating surface was estimated and its values were compared to those obtained by other researchers from correlation equations [1, 3].

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