Effect of Heat Source Location on Heat Transfer Coefficient in Aluminium Tube: Experimental and Analytical Study

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Abstract. Abstract. The effect of heat source position on the heat transfer in an aluminium tube was investigated experimentally and analytically. The experimental data were obtained by measuring the temperature distribution along the tube wall for two different heat source locations. A theoretical model of the tube was developed and validated with the experimental data. A finite element method simulation was performed to analyze the temperature profile and to endorse assumptions for theoretical model. The results showed that the heat transfer rate depend on the heat source position.