

MODES OF GAS MOTION IN EQUIVALENT CHANNEL OF REGENERATIVE HEAT EXCHANGER

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The model of equivalent channels for the heat storage nozzle of a regenerative heat exchanger is considered. Differential heat transfer equations between the heat carrier flow and the surface of the equivalent channel are given. It is suggested to evaluate the efficiency of heat transfer by the coefficients of accumulation and heat recovery of ventilation flows. Criteria for calculating the heat transfer coefficient under laminar and transient modes of gas motion in an equivalent channel is given. The results of a computational study are presented, which make it possible to evaluate the effects of air velocity in the channel on the efficiency of a regenerative heat exchanger.

Keywords: regenerative heat exchanger, equivalent channel, heat transfer coefficient, criterion dependences, heat storage coefficient, turbulence.

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For citations

Serov A. A., Tsygankov A. V., Hildayati A. Modes of gas motion in equivalent channel of regenerative heat exchanger // Omsk Scientific Bulletin. Series Aviation-Rocket and Power Engineering. 2020. Vol. 4, no. 3. P. 38–44. DOI: 10.25206/2588-0373-2020-4-3-38-44.

Received March 3, 2020.

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