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FLOW INTERMITTENCY PATTERN IN CASE OF THE TRANSITIONAL MODE OF HYDRAULIC RESISTANCE

The author considers hydraulic characteristics of the flow inside pipes in case of the transitional mode of hydraulic resistance on the basis of the model taking account of the flow intermittency within the viscous sublayer. The author introduces the notion of the flow intermittency coefficient as its quantitative characteristic. The proposed coefficient represents the ratio of the time period of the turbulent flow near the pipe surface to the total observation time. The author discusses the relationship between the coefficient of the flow intermittency and the characteristics of resistance. The author has obtained dependencies applicable to exact and approximate calculations of the coefficient of intermittency. The coefficient of resistance, calculated on the basis of the formulas proposed for the coefficient intermittency of flow, reflects peculiarities of the behavior of the coefficient of resistance in the transition zone. Its application provides sufficient convergence with the experimental data.

Key words: flow in pipes, hydraulic resistance, transitional mode of hydraulic resistance, coefficient of flow intermittency.

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For citation: Bryanskaya Yu.V. Peremezhaemost' techeniya pri perekhodnom rezhime gidravlicheskogo soprotivleniya [Flow Intermittency Pattern in Case of the Transitional Mode of Hydraulic Resistance]. *Vestnik MGSU* [Proceedings of Moscow State University of Civil Engineering]. 2013, no. 1, pp. 177—184.