

[Minemura, K.](#); [Uchiyama, T.](#); [Ishikawa, T.](#)

Experimental investigations on bubbly flows in a straight channel rotated around an axis perpendicular to the channel. (English) [Zbl 1144.76422](#)

[Int. J. Multiphase Flow](#) 19, No. 3, 439-450 (1993).

Summary: This paper describes experimental investigations on the behavior of an air-water two-phase mixture in a horizontal, radial-flow and square-sectioned straight channel, which rotates around an axis perpendicular to the channel. The hydraulic loss of head and the distributions of pressures and void fractions in the channel were measured mainly in a bubbly flow regime, and the effects of the rotating speed of the channel and the flow rate of water on the loss were discussed in relation to the inlet void fraction. When the rotating speed is increased or the flow rate of water is decreased, a predominant region of high void fractions appearing on the downstream negative side tends to expand upstream as the Rossby number is increased. An almost imperceptible pressure rise in the radial direction of this region causes an excessive increase in the hydraulic loss.

Reviewer: [Reviewer \(Berlin\)](#)

MSC:

[76Txx](#) Multiphase and multicomponent flows

Cited in **1** Document

Keywords:

[bubbly flow](#); [rotating channel](#); [pressure distribution](#); [void fraction](#); [rossby number](#)

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