Fluctuation characteristics of slug liquid holdup for slug flow in horizontal pipe

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Abstract

Fluctuation characteristics on slug liquid holdup and pressure, as well as the effects of gas and liquid superficial velocity on liquid holdup, were experimentally investigated by use of dual-parallel conducting probes. Besides, a comparison between prediction models of slug liquid holdup and test data was made. Using air and water, experiments were carried in the horizontal stainless steel pipe with 50 mm inner diameter. It was found that the curve of liquid holdup could response internal flow characteristics of slug flow more actually, so the fluctuation of slug liquid holdup could be used to determine liquid slug frequency. It also showed that slug liquid holdup decreased with the increase of gas superficial velocity, but increased with the increase of liquid superficial velocity.

Author keywords
Gas superficial velocity ; Liquid holdup ; Liquid superficial velocity ; Pressure fluctuation ; Slug flow

References
