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Abstrak

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The purpose of this study is to investigate the flow patterns of a falling liquid film as observed near an obstacle on a flow channel. In this report, a bend on the channel was chosen as the obstacle and the behavior of a ring-shaped swelling of the liquid film, which appears near the obstacle at a low flow rate, is considered. The Weber number at which the swelling shifts from upstream to downstream of the bend is theoretically estimated. The experimental results for the swelling behavior agree well with those of the above theory. Moreover, in order to investigate the characteristics of the stationary wave observed in the upstream side of the swelling, the wavelength and the damping rate of the amplitude were measured by the needle contact method and agree with theory.