

Abstract Submitted  
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**Standing ripple rings within the super-critical flow region of a circular hydraulic jump** XIYU DU, PAUL STANLEY, Beloit College — The circular hydraulic jump in the presence of a soluble surfactant can display a stable, narrow ring of static ripple features within the inner super-critical flow region. These ripples are likely capillary surface waves pushed inward from the region of the hydraulic jump by surface tension gradient Marangoni type stresses. The behavior appears to be similar to that of the fluid pipe observed when a stream of pure water strikes a reservoir contaminated by a surfactant. In this experiment we primarily consider soluble surfactant dissolved in the source for the impinging jet, so that jet and downstream fluid have same surfactant concentration. We examine the effects of the surfactant concentration on the behavior of the jump and the inner static ripple feature, and propose a model as to the cause and location of these static ripples.

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