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Corner waves downstream a partially submerged vertical plate PABLO MARTINEZ-LEGAZPI, JAVIER RODRIGUEZ-RODRIGUEZ, Universidad Carlos III, JUAN C. LASHERAS, University of California San Diego, LABO-RATORY OF BIOFLUIDS TEAM — We have studied experimentally and numerically the expansion flow developing downstream the corner of a partially submerged vertical plate. In this flow configuration, a steady wave remains attached to the corner of the plate. Both the amplitude and slope of the wave front increase with the downstream distance until, the wave breaks resulting in either a spilling or a plunging breaker. Following theoretical considerations, we propose a criterion based on a critical Froude number to determine which breaker configuration prevails. This criterion is shown to be in good agreement with the experimental results. Despite the simplicity of this flow, the observed wave pattern is remarkably similar to that one found at a dry stern in high-speed surface vessels.

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