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Flow field near the corner of a partially submerged flat plate perpendicular to a uniform stream. PABLO MARTINEZ-LEGAZPI, JAVIER RODRIGUEZ-RODRIGUEZ, U Carlos III Madrid, JUAN C. LASHERAS, UC San Diego — The flow field downstream the corner of a partially submerged vertical flat plate perpendicular to a uniform stream has been experimentally studied. The main feature of this flow is the formation of a steady wave originating at the vertex and whose front is bent towards the centerline of the resulting wake. The amplitude of the wave front grows with the downstream distance to the plate, eventually creating either a spilling or a plunging breaker depending on the flow parameters. The internal structure of these waves is investigated and a criterion to determine the transition between both regimes is proposed. Furthermore, the similarities of these laboratory breakers with breaking waves in the ocean and other flows of interest in oceanography and ship hydrodynamics are explored. This work has been sponsored by the ONR through grant N00014-05-1-0121.

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