

Abstract Submitted  
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**Pressure-gradient Mechanism for Vortex Shedding in External Flows**<sup>1</sup> MICHAEL BOGHOSIAN, KEVIN CASSEL, Illinois Institute of Technology — In our previous research, a pressure-gradient mechanism is identified as a likely cause of vortex splitting and shedding in constricted two-dimensional channel flows. We now find this mechanism present in the canonical two-dimensional external flows of (a) the cylinder in crossflow and (b) the flow over a step via numerical simulations of the unsteady, two-dimensional, incompressible Navier–Stokes equations. The details of the pressure-gradient mechanism are presented for Reynolds numbers typically found in the literature.

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