The dynamics of a flexible loop in a high-speed flow SUNGH-WAN JUNG, AML, Courant Inst., New York Univ., KATHLEEN MARECK, AML, Courant Inst., New York Univ., MICHAEL SHELLEY, AML, Courant Inst., New York Univ., JUN ZHANG, AML, Courant Inst., New York Univ. — We study the behavior of an elastic loop in a fast-flowing soap film. The loop is wetted into the film and is held fixed at a single point against the oncoming flow. We interpret this system as a 2D closed flexible body moving in a quasi-2D flow. The loop is deformed by the flow, and this coupled fluid-structure system shows bi-stability: stationary and oscillatory. In its stationary state, the loop essentially remains motionless and its wake is a von Kármán vortex street. In its oscillatory state, the loop sheds two vortex dipoles within each oscillation period. The frequency of oscillation of the loop is linearly proportional to the flow velocity.