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An Anomalous Behavior in Vortex Shedding in a Flowing Soap Film ILDOO KIM, X.L. WU, University of Pittsburgh — It is generally believed that von Kärmän vortex street is characterized only by Reynolds number $Re = UD/\nu$, where U is the mean flow speed, D is the size of the body which generates the vortex street, and ν is the kinematic viscosity. In this study, we present experimental data in a flowing soap film showing that changing U with fixed D and changing D with fixed U are not equivalent to each other, suggesting that Re alone is not sufficient to characterize vortex shedding by a bluff body. The velocity of eyes of the vortices relative to the mean flow, normalized by U, increases when we increase D, but decreases when we increase U. It is also found that the longitudinal spacing between the eyes is a linear function of D, but independent of U.

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