Abstract Submitted
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The effect of varying downstream cylinder angle on vortex shedding from tandem cylinders[1] JAMIE HOGAN, JOSEPH HALL, University of New Brunswick — Tandem cylinders in cross-flow are typically categorized into three flow regimes depending on the longitudinal pitch ratio, L/D. For $1 < L/D < 1.2 - 1.8$ the shear-layers separating from the upstream cylinder overshoot the downstream cylinder. When $1.2 - 1.8 < L/D < 3.4 - 3.8$, the separated shear layers from the upstream cylinder will reattach, onto the upstream side of the downstream cylinder and a vortex street is formed behind both cylinders. For $3.4 - 3.8 < L/D < 6.0$, the separated shear layers from the upstream cylinder will roll up in the gap between the cylinders. The objective of the current investigation is to study the effect of continually angling the downstream cylinder on the vortex-shedding and correlation lengths. This is accomplished by studying the spanwise pressure fluctuations on the surface of the downstream cylinder using 16 microphones simultaneously. Downstream cylinder angles of 60 through 90 degrees and in addition various azimuthal angles and Reynolds numbers are examined.

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