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The effects of confinement on absolute and convective instabilities for momentum-driven countercurrent shear layers JINWEI YANG, VINOD SRINIVASAN, University of Minnesota — h *-abstract-*\pardConfinement related flows are ubiquitous in both nature and engineering, but the study about the confinement on the absolute and convective instabilities is relatively rare, even for the confined planer shear layers. Recently, we have studied the absolute and convective instabilities for confined planar shears for both inviscid and viscous disturbances. For inviscid shear flow, we find the effect of confinement on the high-speed side is totally different from that on the low-speed side. For both cases, there exists more than one mode, one of which is similar to the free shear layer mode, the others are new findings that become more unstable as the location of the inflection point is reduced and will be the dominant mode when the confinement is strong enough. Also, the effect of boundary layer development on the unstable frequencies has been examined. At last, we compare the predictions of linear stability theory with experimental observations of confined countercurrent shear layers.\pard-/abstract-

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