

Viscous interaction between parallel radial streams

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Received 29-MAY-92

Similarity solutions of the appropriate boundary-layer equations are obtained for the steady laminar shear layer between adjacent parallel radial streams of different velocities. The dependence of the resulting velocity distributions upon the radial pressure gradient is investigated. A minimal favourable pressure gradient is necessary for inward radial flows to produce shear layers of finite displacement thickness. The latter requirement determines a unique solution in the case of outward flows. The maximal adverse pressure gradient for which the present problem admits of physically acceptable similarity solutions is significantly larger than the corresponding value for boundary layers on a solid wall.

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