



The Structure of a Turbulent Flow in a Channel of Complex Shape: Usgs Professional Paper 983 (Paperback)

By Hubert Jerome Tracy

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.Measurements of the Reynolds stresses and the mean motion pattern were made in a uniform turbulent motion in a conduit consisting of a large, nearly square section joined by a smaller rectangular section. The results indicate that the boundary shearing stress is nearly constant over large segments of the boundaries. The magnitudes of the lateral and the vertical components of turbulence are not the same near a boundary and the component normal to the boundary is smaller than the component parallel to the boundary. The difference in the two components in the corner regions of the channel produces secondary mean motions in the plane of the channel section. The strength of the motion depends upon the angle subtended by the corner. A principal function of the secondary motions is to transfer momentum into the corner regions and, elsewhere, to compensate for the excess force due to the shear gradients. In the absence of the secondary motions, the fluid must stagnate and separate from the boundaries in certain regions and be greatly accelerated in others. The secondary motions are...



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