Free Surface Flow

Basic Concepts of Free Surface Flow, classification of flow, velocity & pressure distribution. Conservation laws: continuity equation, momentum equation,

Velocity and Pressure distribution in channel, Uniform flow, Efficient section, Section of constant velocity, Specific energy, Critical depth, Section factor, First hydraulic exponent M, Second hydraulic exponent N, Compound section

Non-uniform flow, Gradually varied flow, Characteristic of surface profiles, Integration of varied flow equation, Estimation of N and M for trapezoidal channel

Rapid varied flow, Hydraulic jump, classification, location and length of hydraulic jump, jumps in Non-rectangular channel, Jumps as energy dissipater, Surges in open channel, Positive surges, Negative surges

Sharp crested weir, submergence, Ogee spillway: Uncontrolled, Gated, Contraction; Broad crested weir, Sluice gate flow.

References:

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