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Sommario/riassunto

The book describes an integrated theory that links estuary shape to tidal hydraulics, tidal mixing and salt intrusion. The shape of an alluvial estuary is characterised by exponentially varying width and the absence of bottom slope. This topography is closely related to tidal parameters, hydraulic parameters and parameters that describe 1-dimensional mixing and salt intrusion. Starting from the fundamental equations for conservation of mass and momentum, analytical equations are derived that relate the topography to tidal parameters (tidal excursion, phase lag, tidal damping, tidal amplificati