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3.3.4 Illustrative Applications3.4 Interaction of two flat double layers; 3.4.1 Force and Energy Interaction; 3.4.2 Illustrative Examples; 3.4.3 Potential Energy of Interaction between Two Flat Double Layers; 3.4.4 Illustrative Examples; 3.4.5 Potential Energy of Interaction of Two Flat Double Layers Due to van der Waals Forces; 3.4.6 Total Potential Energy for Two Particles and the Process of Flocculation; 3.5 Some important properties of fine particles and aggregates; 3.5.1 The Counterion Exchange; 3.5.2 Limitations of the Gouy-Chapman Theory and the Stern Layer; 3.5.3 The Water Phase
3.5.4 Sensitivity and Thixotropy3.6 Internal structure and fabric of flocs, aggregates, and cohesive sediment deposits; 3.6.1 Particle Arrangements within Flocs; 3.6.2 The Microstructure of Deposited Cohesive Sediment Beds; Chapter 4 The Hydrodynamic Transport Processes of Cohesive Sediments and Governing Equations; 4.1 The fundamental transport equations for cohesive sediments; 4.1.1 The Development of the General Transport Equations; 4.1.2 Discussion of the Developed Equations; 4.2 The process and dynamics of flocculation; 4.2.1 Collisions Due to Brownian Motion
4.2.2 Collisions Due to Velocity Gradients4.2.3 Collisions Due to Differential Settling; 4.2.4 Concluding Remarks; 4.3 Review of fundamental properties of turbulent flows; 4.3.1 Significant Stresses and Parameters; 4.3.2 Collision Rates in Turbulent Flows; 4.4 The properties of the aggregates and the aggregate growth equation; 4.4.1 The Properties of Aggregates and Their Relation to the Controlling Flow Variables; 4.4.2 Quasi Steady-State Aggregate Distribution and Maximum Aggregate Size; 4.4.3 Some Additional Research Work on Flocculation and Aggregate Properties
4.4.4 Discussion and Concluding Remarks

Sommario/riassunto

Control the impact of cohesive sediments on open channels by managing the effects of silt, clay and other sediments in harbors, estuaries and reservoirs. Cohesive Sediments in Open Channels provides you with a practical framework for understanding how cohesive sediments are transported, deposited and eroded. One of the first books to approach the subject from an engineering's perspective, this book supplies insight into applying hydraulic design as well as understanding the behavior of cohesive sediments in a flow field. Properties and of the nature and the origin of the interparticle p