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2.3.5 The characteristics curves; 2.3.6 Notions on hydraulic jumps; 2.3.7 Saint-Venant equations in Mercator projection; 2.3.8 Saint-Venant equations with porosity; 2.3.9 Boussinesq equations; 2.3.10 Serre equations

2.3.11 Source terms and body forces in two dimensions 2.3.12 Boundary conditions in 2D; 2.3.13 Tracer equation in two dimensions;

2.4 Modelling of turbulence and dispersion; 2.4.1 Reynolds stress; 2.4.2 Zero-equation models; 2.4.3 Turbulence stress on the walls; 2.4.4 Equations of the k-e model; 2.4.5 Other models; 3 Principles of the finite element method; 3.1 Introduction; 3.2 Interpolation in finite elements; 3.3 Variational principle; 4 Resolution of the Saint-Venant equations; 4.1 A glance at the existing methods; 4.1.1 Main properties of a (good) numerical scheme

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Sommario/riassunto

A definitive guide for accurate state-of-the-art modelling of free surface flows Understanding the dynamics of free surface flows is the starting point of many environmental studies, impact studies, and waterworks design. Typical applications, once the flows are known, are water quality, dam impact and safety, pollutant control, and sediment transport. These studies used to be done in the past with scale models, but these are now being replaced by numerical simulation performed by software suites called "hydro-informatic systems". The Telemac system is the leading software package wor
