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9.5 Effective Relative Permeability and Capillary Pressure9.6 Transmissibility; Exercises; Chapter 10. Fluid Properties; 10.1 Fundamental Fluid Property Concepts; 10.2 Black Oil Model PVT Data; 10.3 Extrapolating Saturated Curves; 10.4 Bubble Point Tracking; 10.5 Extended Fluid Properties Model; Exercises; Chapter 11. Fluid Displacement; 11.1 Mobility; 11.2 Fractional Flow; 11.3 Recovery Efficiency; 11.4 Production Stages; 11.5 Miscible Displacement Models; Exercises; Chapter 12. Formulation of Flow Equations; 12.1 Conservation of Mass; 12.2 Flow Equations for Three-Phase Flow
12.3 Recasting the Flow Equations12.4 Introduction of the Capillary Pressure Concept; 12.5 Extended Black Oil Simulator Equations; Exercises; Chapter 13. Source/Sink Terms; 13.1 Productivity Index; 13.2 Rate Constraint Representation; 13.3 Pressure Constraint Representation; 13.4 Well Constraints; 13.5 Aquifer Models; Exercises; Chapter 14. Solution of the Extended Flow Equations; 14.1 The Finite Difference Concept; 14.2 Derivative of Accumulation Terms; 14.3 Volume Integration and Discretization; 14.4 Multi-Variable Newton-Raphson IMPES Procedure; Exercises; Chapter 15. IFLO Applications
15.1 Monitoring Frontal Advance

Sommario/riassunto

Integrated Flow Modeling presents the formulation, development and application of an integrated flow simulator (IFLO). Integrated flow models make it possible to work directly with seismically generated data at any time during the life of the reservoir. An integrated flow model combines a traditional flow model with a petrophysical model. The text discusses properties of porous media within the context of multidisciplinary reservoir modeling, and presents the technical details needed to understand and apply the simulator to realistic problems. Exercises throughout the text direct the reade