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| Note generali           | Description based upon print version of record.  |
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| Nota di contenuto       | Front Cover; Equations of State and PVT Analysis: Applications for Improved Reservoir Modeling; Copyright Page; Dedication; Table of Contents; Preface; About the Author; Acknowledgments; Chapter 1. Fundamentals of Hydrocarbon Phase Behavior; Single-Component Systems; Two-Component Systems; Three-Component Systems; Multicomponent Systems; Classification of Reservoirs and Reservoir Fluids; Phase Rule; Problems; References; Chapter 2. Characterizing Hydrocarbon-Plus Fractions; Generalized Correlations; PNA Determination; Graphical Correlations; Splitting and Lumping Schemes; Problems; References<br>Chapter 3. Natural Gas Properties Behavior of Ideal Gases; Behavior of Real Gases; Problems; References; Chapter 4. PVT Properties of Crude Oils; Crude Oil Gravity; Specific Gravity of the Solution Gas; Crude Oil Density; Gas Solubility; Bubble-Point Pressure; Oil Formation Volume Factor; Isothermal Compressibility Coefficient of Crude Oil; Undersaturated Oil Properties; Total-Formation Volume Factor; Crude Oil Viscosity; Surface/Interfacial Tension; PVT Correlations for Gulf of Mexico Oil; Properties of Reservoir Water; Laboratory Analysis of Reservoir Fluids; Problems; References<br>Chapter 5. Equations of State and Phase Equilibria Equilibrium Ratios; Flash Calculations; Equilibrium Ratios for Real Solutions; Equilibrium |

Ratios for the Plus Fractions; Vapor-Liquid Equilibrium Calculations; Equations of State; Equation-of-State Applications; Simulation of Laboratory PVT Data by Equations of State; Tuning EOS Parameters; Original Fluid Composition from a Sample Contaminated with Oil-Based Mud; Problems; References; Chapter 6. Flow Assurance; Hydrocarbon Solids: Assessment of Risk; Phase Behavior of Asphaltenes; Asphaltene Deposit Envelope; Modeling the Asphaltene Deposit Phase Behavior of Waxes Modeling Wax Deposit; Prediction of Wax Appearance Temperature; Gas Hydrates; Problems; References; Appendix; Index

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Sommario/riassunto

This title covers a wide range of topics related to the Pressure Volume Temperature (PVT) behavior of complex hydrocarbon systems and documents the ability of Equations of State (EOS) in modeling their behavior. The main objective of this book is to provide the practicing engineer and engineering student with tools needed to solve problems that require a description of the PVT of hydrocarbon systems from their compositions. Because of the dramatic evolution in computational capabilities, petroleum engineers can now study such phenomena as the development of miscibility during ga

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