

1. Record Nr.	UNINA9910788143303321
Autore	Jamshidnezhad Mohammad
Titolo	Experimental design in petroleum reservoir studies // Mohammad Jamshidnezhad
Pubbl/distr/stampa	Amsterdam, [Netherlands] : , : Elsevier, , 2015 ©2015
Descrizione fisica	1 online resource (187 p.)
Disciplina	622.3382015118
Soggetti	Oil reservoir engineering - Mathematical models Petroleum - Geology - Mathematical models Petroleum engineering - Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Experimental Design in Petroleum Reservoir Studies; Copyright Page; Contents; Biography; Preface; 1 Introduction; 1.1 Petroleum reservoirs; 1.2 Petroleum rock properties; 1.3 Volumetric calculations in a reservoir; 1.4 Reservoir heterogeneity; 1.5 Reservoir models; 1.6 Experimental design; 2 Reservoir modeling; 2.1 Introduction; 2.2 Sources of data for reservoir modeling; 2.3 Reservoir characterization; 2.3.1 Geophysical and geological data; 2.3.2 Engineering data; 2.3.2.1 Core data; 2.3.2.2 Well logging data; 2.3.2.3 Pressure transient data 2.3.2.4 Properties of reservoir fluids 2.3.2.5 Rock-Fluid data; 2.3.2.6 Initialization data; 2.3.2.7 Well and recurrent data; 2.4 Mathematical modeling; 2.4.1 Decline curve analysis; 2.4.2 Analytical models; 2.4.3 Numerical simulation; 2.5 Model verification; 3 Experimental design in reservoir engineering; 3.1 Introduction; 3.2 Errors in mathematical modeling; 3.3 Uncertainty in reservoir data; 3.3.1 Uncertainty in geophysical data; 3.3.2 Uncertainty in geological data; 3.3.3 Uncertainty in dynamic data; 3.3.4 Uncertainty in PVT data; 3.3.5 Uncertainty in field performance data 3.4 Uncertainty analysis 3.4.1 History matching; 3.4.2 Stochastic methods for uncertainty analysis; 3.4.2.1 Basic definitions; 3.4.3 Monte Carlo simulation; 3.5 Experimental design; 3.5.1 Basic rules in

experimental design; 3.5.2 Outcomes of experimental design; 3.5.3 Designs; 3.5.3.1 Two-level full factorial designs; 3.5.3.2 Two-level fractional factorial designs; 3.5.3.3 Plackett-Burman design; 3.5.3.4 Three-level designs; 3.5.3.5 Latin hypercube design; 3.5.4 Response surface; 3.5.5 Sensitivity analysis; 3.5.5.1 Sensitivity analysis work flow; 4 Case studies; 4.1 Introduction  
4.2 Case study 14.2.1 Ninth SPE comparative solution problem; 4.2.2 Uncertain parameters; 4.2.3 Experimental design; 4.2.4 Response surfaces; 4.3 Case study 2; 4.3.1 Undersaturated fractured reservoir in the middle east; 4.3.2 Uncertainty parameters; 4.4 Case study 3; 4.4.1 PUNQ case; 4.4.2 Uncertain parameters; 4.5 Case study 4; 4.5.1 Steam assisted gravity drainage in a heavy oil reservoir; 4.5.2 Experimental design; 4.6 Case study 5; 4.6.1 Barnett shale gas reservoir; 4.6.2 Reservoir modeling; 4.6.3 Uncertainty parameters; 4.6.4 Experimental design; 4.7 Case study 6  
4.7.1 Miscible WAG injection4.7.2 Reservoir modeling; 4.7.3 Uncertain parameters; 4.7.4 Experimental design; Appendix: F distribution values; References; Index

---