

1. Record Nr.	UNINA9910454653903321
Autore	Huang Kou-Yuan
Titolo	Syntactic pattern recognition for seismic oil exploration [[electronic resource] /] / Kou-Yuan Huang
Pubbl/distr/stampa	River Edge, NJ, : World Scientific, c2002
ISBN	1-281-92835-6 9786611928353 981-277-574-9
Descrizione fisica	1 online resource (149 p.)
Collana	Series in machine perception and artificial intelligence ; ; v. 46
Disciplina	622/.1828/0285
Soggetti	Petroleum - Prospecting - Data processing Pattern recognition systems Seismic reflection method - Data processing Electronic books.
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 (p. 123-129) and index.
Nota di contenuto	CONTENTS; AUTHOR'S BIOGRAPHY; PREFACE; 1 INTRODUCTION TO SYNTACTIC PATTERN RECOGNITION; 1.1. SUMMARY; 1.2. INTRODUCTION; 1.3. ORGANIZATION OF THIS BOOK; 2 INTRODUCTION TO FORMAL LANGUAGES AND AUTOMATA; 2.1. SUMMARY; 2.2. LANGUAGES AND GRAMMARS; 2.3. FINITE-STATE AUTOMATON; 2.4. EARLEY'S PARSING; 2.5. FINITE-STATE GRAMMATICAL INFERENCE; 2.6. STRING DISTANCE COMPUTATION; 3 ERROR-CORRECTING FINITE-STATE AUTOMATON FOR RECOGNITION OF RICKER WAVELETS; 3.1. SUMMARY; 3.2. INTRODUCTION; 3.3. SYNTACTIC PATTERN RECOGNITION; 3.3.1. Training and Testing Ricker Wavelets 3.3.2. Location of Waveforms and Pattern Representation 3.4. EXPANDED GRAMMARS; 3.4.1. General Expanded Finite-State Grammar; 3.4.2. Restricted Expanded Finite-State Grammar; 3.5. MINIMUM-DISTANCE ERROR-CORRECTING FINITE-STATE PARSING; 3.6. CLASSIFICATION OF RICKER WAVELETS; 3.7. DISCUSSION AND CONCLUSIONS; 4 ATTRIBUTED GRAMMAR AND ERROR-CORRECTING EARLEY'S PARSING; 4.1. SUMMARY; 4.2. INTRODUCTION; 4.3. ATTRIBUTED PRIMITIVES AND STRING; 4.4. DEFINITION OF ERROR

TRANSFORMATIONS FOR ATTRIBUTED STRINGS; 4.5. INFERENCE OF ATTRIBUTED GRAMMAR
4.6. MINIMUM-DISTANCE ERROR-CORRECTING EARLEY'S PARSING FOR ATTRIBUTED STRING
4.7. EXPERIMENT; 5 ATTRIBUTED GRAMMAR AND MATCH PRIMITIVE MEASURE (MPM) FOR RECOGNITION OF SEISMIC WAVELETS; 5.1. SUMMARY; 5.2. SIMILARITY MEASURE OF ATTRIBUTED STRING MATCHING; 5.3. INFERENCE OF ATTRIBUTED GRAMMAR; 5.4. TOP-DOWN PARSING USING MPM; 5.5. EXPERIMENTS OF SEISMIC PATTERN RECOGNITION; 5.5.1. Recognition of Seismic Ricker Wavelets; 5.5.2. Recognition of Wavelets in Real Seismogram; 5.6. CONCLUSIONS;
6 STRING DISTANCE AND LIKELIHOOD RATIO TEST FOR DETECTION OF CANDIDATE BRIGHT SPOT; 6.1. SUMMARY
6.2. INTRODUCTION
6.3. OPTIMAL QUANTIZATION ENCODING; 6.4. LIKELIHOOD RATIO TEST (LRT); 6.5. LEVENSHTAIN DISTANCE AND ERROR PROBABILITY; 6.6. EXPERIMENT AT MISSISSIPPI CANYON; 6.6.1. Likelihood Ratio Test (LRT); 6.6.2. Threshold for Global Detection; 6.6.3. Threshold for the Detection of Candidate Bright Spot; 6.7. EXPERIMENT AT HIGH ISLAND; 7 TREE GRAMMAR AND AUTOMATON FOR SEISMIC PATTERN RECOGNITION; 7.1. SUMMARY; 7.2. INTRODUCTION; 7.3. TREE GRAMMAR AND LANGUAGE; 7.4. TREE AUTOMATON; 7.5. TREE REPRESENTATIONS OF PATTERNS; 7.6. INFERENCE OF EXPANSIVE TREE GRAMMAR
7.7. WEIGHTED MINIMUM-DISTANCE SPECTA
7.8. MODIFIED MAXIMUM-LIKELIHOOD SPECTA; 7.9. MINIMUM DISTANCE GECTA; 7.10. EXPERIMENTS ON INPUT TESTING SEISMOGRAMS; 7.11. DISCUSSION AND CONCLUSIONS; 8 A HIERARCHICAL RECOGNITION SYSTEM OF SEISMIC PATTERNS AND FUTURE STUDY; 8.1. SUMMARY; 8.2. INTRODUCTION; 8.3. SYNTACTIC PATTERN RECOGNITION; 8.3.1. Linking Processing and Segmentation; 8.3.2. Primitive Recognition; 8.3.3. Training Patterns; 8.3.4. Grammatical Inference; 8.3.5. Finite-state Error Correcting Parsing; 8.4. COMMON-SOURCE SIMULATED SEISMOGRAM RESULTS; 8.5. STACKED SIMULATED SEISMOGRAM RESULTS
8.6. CONCLUSIONS

Sommario/riassunto

The use of pattern recognition has become more and more important in seismic oil exploration. Interpreting a large volume of seismic data is a challenging problem. Seismic reflection data in the one-shot seismogram and stacked seismogram may contain some structural information from the response of the subsurface. Syntactic/structural pattern recognition techniques can recognize the structural seismic patterns and improve seismic interpretations. The syntactic analysis methods include: (1) the error-correcting finite-state parsing, (2) the modified error-correcting Earley's parsing, (3) the p
