

1. Three-stage stochastic modelling method to characterize reservoir with fluvial facies

Wang, Jiahua (1); Zhang, Tuanfeng (1)

Source: *Proceedings of the International Meeting on Petroleum Engineering*, v 2, p 163-174, 1995; **DOI:** 10.2118/29965-ms; **Conference:** Proceedings of the International Meeting on Petroleum Engineering. Part 1 (of 2), November 14, 1995 - November 17, 1995; **Sponsor:** SPE; **Publisher:** Society of Petroleum Engineers (SPE)

Author affiliation: (1) Xian Petroleum Inst, Xian, China

Abstract: A method is presented for three-stage stochastic modelling of reservoir with fluvial facies. It consists of a stratification plane configuration model, a sandbody framework model and a petrophysical parameter distribution model. The method is especially useful for the quantitative description of complex fault block reservoirs with fluvial facies. (10 refs)

Main heading: Petroleum reservoirs

Controlled terms: Geologic models - Mathematical models - Petroleum geology - Petrology - Stratigraphy - Tectonics

Uncontrolled terms: Complex fault block reservoir - Fluvial facies - Petrophysical parameter distribution model - Sandbody framework model - Stratification plane configuration model - Three stage stochastic modeling

Classification Code: 481.1 Geology - 481.1.2 Petrology (Before 1993, use code 482) - 512.1 Petroleum Deposits - 921 Mathematics

Treatment: General review (GEN) - Theoretical (THR)

Database: Compendex

Data Provider: Engineering Village

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2. Further investigation into the effect of radial inertia on SHPB measurement

Zhang, Ruiping ; Liu, Tingguo ; Gong, Yuning

Source: *International Academic Publishers*, p 303, 1995; **Conference:** Proceedings of the 1st International Symposium on Test and Measurement, Aug 10 - 14 1995; **Sponsor:** Chinese Society for Modern Technical Equipment; **Publisher:** International Academic Publishers

Database: Compendex

Data Provider: Engineering Village

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3. Design of the separator used to recognize the working condition of the sucker rod pump in a pumping well

Peng, Yong

Source: *Journal of Engineering and Applied Science*, v 10, n 3, p 35-37, 1995; **ISSN:** 11101903; **Publisher:** Xi'an Petroleum Institute Journal

Abstract: On the basis of analysing the existing separators used to recognize the working condition of the sucker rod pump in a pumping well, this paper presents Fisher separator to be used in that situation, laying stress on the design method, i.e. to compute recurrently the characteristic average value and the covariance and provide the initial conditions and symmetrical conditions. The Fisher separator only requires the characteristic average value and covariance matrix of the known operating mode sample, neglects the requirement of the forward distribution for the operating mode sample. The correct rate of recognizing the working condition of the sucker rod pump in pumping wells was improved. The recurrent computation greatly reduced the characteristic data of the pump's working condition to be stored and simplified the computation in designing the separator, which makes the adding and correcting of the characteristic data more conveniently. According to the characteristics of the statistical figures of grey level on the dynamograph, a practical design example for four kinds of working conditions of the sucker rod pump is given. (10 refs)

Main heading: Separators

Controlled terms: Well pumps - Stresses - Matrix algebra - Calculations - Statistical methods

Uncontrolled terms: Working condition - Sucker rod pump - Fisher separator - Covariance matrix - Operating mode - Grey level - Dynamograph

Classification Code: 802.1 Chemical Plants and Equipment - 618.2 - 931.1 - 921.1 - 922.2

Treatment: Applications (APP)

Database: Compendex

Data Provider: Engineering Village

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4. TC787 and TC788 phase-shift trigger

Li, Hong ; Zhang, Li

Source: *Dianqi Zidonghua/Electrical Automation*, v 17, n 5, p 32-33, Sept 1995; **Language:** Chinese; **ISSN:** 10003886
Database: Compendex
Data Provider: Engineering Village
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5. Application of AWG method of numerical inversion of Laplace transform for flow in a fluid finite-conductivity vertical fractures

He, Guangyu ; Li, Lun

Source: *Shiyou Kan Tan Yu Kai Fa/Petroleum Exploration and Development*, v 22, n 6, p 47-50, Dec 1995;
Language: Chinese; **ISSN:** 10000747
Database: Compendex
Data Provider: Engineering Village
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6. Object-oriented expert system and its study in reservoir protection intelligent system

Dong, Haifeng

Source: *Xinan Shiyou Xueyuan Xuebao/Journal of Southwestern Petroleum Institute*, v 17, n 4, p 80-85, Nov 1995;
Language: Chinese; **ISSN:** 10002634
Database: Compendex
Data Provider: Engineering Village
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7. Application of SHPB device to the measurement and analysis of dynamic behaviour of engineering structures or elements

Zhang, Ruiping ; Liu, Tingguo ; Gong, Yuning

Source: *International Academic Publishers*, p 297, 1995; **Conference:** Proceedings of the 1st International Symposium on Test and Measurement, Aug 10 - 14 1995; **Sponsor:** Chinese Society for Modern Technical Equipment; **Publisher:** International Academic Publishers
Database: Compendex
Data Provider: Engineering Village
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8. Necessity of applying heating-for-viscosity process in pumping-heating station

Xiong, Xiao ; Xu, Chang'an ; Hua, Zhenkai ; Zhang, Tingxiao ; Han, Jisheng

Source: *Wusun Jiance/Nondestructive Testing*, v 17, n 12, p 1-3, Dec 1995; **Language:** Chinese; **ISSN:** 10006656
Database: Compendex
Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

9. Methods of improving the generality and fault tolerance of software with dBASE III

Cheng, Jun-bo

Source: *Journal of Engineering and Applied Science*, v 10, n 4, 1995; **Language:** Chinese; **ISSN:** 11101903;
Publisher: Xi'an Petroleum Institute Journal

Abstract: In view of the system of management information, the paper analyses the processing methods which adopt module link and the structure mode of library file, illustrating in detail how to use the technique of changeable menu and macroreplacement order to improve the software generality in developing software with dBASE III or FOXBASE. Several valid methods for improving the fault tolerance of software are presented. (3 refs)

Main heading: Petroleum engineering

Controlled terms: Computer aided software engineering - Management information systems - File organization - Data processing - Computer programming - Fault tolerant computer systems

Uncontrolled terms: Software generality - Software fault tolerance - Changeable menu - Macroreplacement order - Software Package dBASE III - Software Package FOXBASE

Classification Code: 512 Petroleum and Related Deposits - 723.5 - 723.1 - 912.2 - 723.2 - 722.4

Treatment: Applications (APP) - Theoretical (THR)

Database: Compendex

Data Provider: Engineering Village
Compilation and indexing terms, Copyright 2023 Elsevier Inc.

10. P-T instrument hoisted by cable for deflagration fracturing of oil well

Gao, Li ; Li, Wenkui ; Wang, Anshi ; Jin, Baiying

Source: *International Academic Publishers*, p 610, 1995; **Conference:** Proceedings of the 1st International Symposium on Test and Measurement, Aug 10 - 14 1995; **Sponsor:** Chinese Society for Modern Technical Equipment; **Publisher:** International Academic Publishers

Database: Compendex

Data Provider: Engineering Village

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11. Postweld tempering for coarse-crystal area on 35CrMo steel

Gao, Huilin

Source: *Shiyou Jixie/China Petroleum Machinery*, v 23, n 11, p 28-31, Nov 1995; **Language:** Chinese; **ISSN:** 10014578

Database: Compendex

Data Provider: Engineering Village

Compilation and indexing terms, Copyright 2023 Elsevier Inc.

12. Mathematical models of directional survey system used in well drilling

Fu, Xin-sheng

Source: *Journal of Engineering and Applied Science*, v 10, n 3, 1995; **ISSN:** 11101903; **Publisher:** Xi'an Petroleum Institute Journal

Abstract: In surveying the location of drilling tools in the wellbore or downhole, accelerating sensors and magnetic flux sensors used in aviation and space flight industry were used in wells, the depth of which are several thousand meters. The survey accuracy is very high and the work is reliable. Vector analysis method was used to derive the mathematical models of two kinds of electronic instruments for surveying the trajectory of well bore in drilling. The relation among the characteristic parameters which express the space status of well bore's trajectory is discussed in detail in this paper.

Main heading: Directional logging

Controlled terms: Well drilling - Mathematical models - Surveys - Surveying - Drilling equipment - Sensors - Vectors - Boreholes - Directional drilling

Uncontrolled terms: Directional survey system - Drilling tools - Well bore - Down hole - Accelerating sensors - Magnetic flux sensors - Well bore trajectory - Gravity logging - Magnetic logging - Deviation angle

Classification Code: 512.1.2 Petroleum Deposits : Development Operations - 921.6 - 405.3 - 604.2 - 732.2

Treatment: Applications (APP) - Theoretical (THR)

Database: Compendex

Data Provider: Engineering Village

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13. Effect of inorganic salt on the adsorption of steam injection additives on the surface of quartz

Qu, Cheng-tun (1)

Source: *Xi'an Shiyou Xueyuan Xuebao/Journal of Xi'an Petroleum Institute (Natural Science Edition)*, v 10, n 4, p 50-52, 1995; **Language:** Chinese; **ISSN:** 10015361; **Publisher:** Xi'an Petroleum Institute Journal

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: Steam injection additives are often used in steam stimulation or steam flooding of heavy crude oil reservoir. In order to study the loss mechanism and provide the basis of lowering the adsorptive capacity of steam injection additives in porous medium, this paper studied, the effect of the adsorption and salt of steam injection additives on the surface of quartz sand on the adsorption. The result was that it took 20 hours for the adsorption of steam injection additives on the surface of quartz sand to reach the balance of adsorption, the adsorption isothermal curve doesn't follow langmuir isothermal and the adsorptive capacity was 1.8mg/g quartz sand at 60°C. NaCl and NaBr increased the adsorptive capacity. So did NaI when the concentration was higher than 600 mg/L. The adsorptive capacity increased with the increase of the cationic charge and the reduction of the ion radius. (5 refs)

Main heading: Petroleum reservoirs

Controlled terms: Additives - Gas adsorption - Injection (oil wells) - Oil well flooding - Quartz - Salt deposits - Sodium chloride - Steam - Surfaces - Well stimulation

Uncontrolled terms: Adsorptive capacity - Inorganic salt - Sodium bromide - Steam flooding - Steam injection - Steam stimulation

Classification Code: 505.1 Nonmetallic Mines - 511.1 Oil Field Production Operations - 512.1 Petroleum Deposits - 802.3 Chemical Operations - 803 Chemical Agents and Basic Industrial Chemicals - 931.2 Physical Properties of Gases, Liquids and Solids

Treatment: Experimental (EXP)

Database: Compendex

Data Provider: Engineering Village

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14. Methods of improving the generality and fault tolerance of software with dBASE III

Cheng, Jun-bo (1)

Source: *Xi'an Shiyou Xueyuan Xuebao/Journal of Xi'an Petroleum Institute (Natural Science Edition)*, v 10, n 4, 4pp, 1995; **Language:** Chinese; **ISSN:** 10015361; **Publisher:** Xi'an Petroleum Institute Journal

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: In view of the system of management information, the paper analyses the processing methods which adopt module link and the structure mode of library file, illustrating in detail how to use the technique of changeable menu and macroreplacement order to improve the software generality in developing software with dBASE III or FOXBASE. Several valid methods for improving the fault tolerance of software are presented. (3 refs)

Main heading: Petroleum engineering

Controlled terms: Computer aided software engineering - Computer programming - Data processing - Fault tolerant computer systems - File organization - Management information systems

Uncontrolled terms: Changeable menu - Macroreplacement order - Software fault tolerance - Software generality - Software Package dBASE III - Software Package FOXBASE

Classification Code: 512 Petroleum and Related Deposits - 722.4 Digital Computers and Systems - 723.1 Computer Programming - 723.2 Data Processing and Image Processing - 723.5 Computer Applications - 912.2 Management

Treatment: Applications (APP) - Theoretical (THR)

Database: Compendex

Data Provider: Engineering Village

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15. Drawing a geological structure map by an iterative inversive interpolation method

Yu, Yuan-hua (1)

Source: *Xi'an Shiyou Xueyuan Xuebao/Journal of Xi'an Petroleum Institute (Natural Science Edition)*, v 10, n 4, p 15-17, 1995; **Language:** Chinese; **ISSN:** 10015361; **Publisher:** Xi'an Petroleum Institute Journal

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: The iterative inversive interpolation algorithm is a linear inversive method which interpolates according to a set of rules and allows to introduce a series of limited conditions of layers, for example, it defines the faults on layer in a simpler way and can recognize and gridiron the discontinuous layer structure. In the boundary area without data points, this method can extend the layers according to the trend of layers. Although the iterative inversive interpolation algorithm may take more computing time than conventional interpolation methods, it can produce a complex geological structure map with least control points and can deal with any complex layers. (4 refs)

Main heading: Geology

Controlled terms: Algorithms - Computer aided design - Drawing (graphics) - Interpolation - Inverse problems - Iterative methods - Mapping - Maps

Uncontrolled terms: Computer cartography - Geological structural map - Iterative inversive interpolation

Classification Code: 405.3 Surveying - 481.1 Geology - 723.5 Computer Applications - 902.1 Engineering Graphics - 921.6 Numerical Methods

Treatment: Applications (APP) - Theoretical (THR)

Database: Compendex

Data Provider: Engineering Village

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16. Present situation and development tendency of China's petroleum market

Zhang, Shaohuai (1); Hu, Jian (1)

Source: *Proceedings of the International Meeting on Petroleum Engineering*, v 1, p 111-126, 1995; **DOI:** 10.2523/29901-ms; **Conference:** Proceedings of the International Meeting on Petroleum Engineering. Part 1 (of 2), November 14, 1995 - November 17, 1995; **Sponsor:** SPE; **Publisher:** Society of Petroleum Engineers (SPE)

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: The paper presents an analysis and evaluation of the current situation and developmental trend of the petroleum market of China. The authors believed that the marketing deformation of petroleum industry and development of petroleum market of China is restricted by the change of whole economic system in China. This paper discussed the aspects of changes of Petroleum Market and predicted the developmental trend of China's petroleum market, which includes the relationship between supply and demand, price fluctuation and characteristics of petroleum source allocations, etc. (8 refs)

Main heading: Petroleum industry

Controlled terms: Industrial economics - Marketing

Uncontrolled terms: Chinese petroleum market - Petroleum source allocations - Supply and demand

Classification Code: 511 Oil Field Equipment and Production Operations - 512 Petroleum and Related Deposits - 513 Petroleum Refining - 911.2 Industrial Economics - 911.4 Marketing

Treatment: General review (GEN)

Database: Compendex

Data Provider: Engineering Village

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17. On the axial flow of generalized second order fluid in a pipe

He, Guangyu (1); Huang, Junqi (1); Liu, Ciqun (1)

Source: *Applied Mathematics and Mechanics (English Edition)*, v 16, n 9, p 825-831, Sept 1995; **ISSN:** 02534827;

Publisher: Shanghai Univ of Technology

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: It is more reasonable to introduce the fractional calculus approach into the constitutive relationship for the fluid materials whose characteristics are in-between the elastic and viscous one, hence the fractional calculus approach was used here to study the second-order fluid flow in a pipe. An analytical solution of the axial velocity of fluid was first derived whose derivative order is half, then it was used to verify the reliability of Laplace numerical inversion based on Crump algorithm for the problem, and finally, the characteristics of second-order fluid flow in a pipe were analyzed by using the Crump method. The results show that the more obvious the viscoelastic properties of the fluid is, the more sensitive the dependences of velocity and stress on the fractional derivative order are. (9 refs)

Main heading: Viscoelasticity

Controlled terms: Axial flow - Flow of fluids - Mathematical techniques - Non Newtonian flow - Petroleum engineering - Wall flow

Uncontrolled terms: Axial flow - Integral transformation - Pipe flow - Second order fluids

Classification Code: 511.2 Oil Field Equipment - 631.3 Flow of Fluid-Like Materials - 921 Mathematics

Treatment: Applications (APP) - Theoretical (THR)

Database: Compendex

Data Provider: Engineering Village

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18. Design of the separator used to recognize the working condition of the sucker rod pump in a pumping well

Peng, Yong (1)

Source: *Xi'an Shiyou Xueyuan Xuebao/Journal of Xi'an Petroleum Institute (Natural Science Edition)*, v 10, n 3, p 35-37, 1995; **ISSN:** 10015361; **Publisher:** Xi'an Petroleum Institute Journal

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: On the basis of analysing the existing separators used to recognize the working condition of the sucker rod pump in a pumping well, this paper presents Fisher separator to be used in that situation, laying stress on the design method, i.e. to compute recurrently the characteristic average value and the covariance and provide the initial conditions and symmetrical conditions. The Fisher separator only requires the characteristic average value and covariance matrix of the known operating mode sample, neglects the requirement of the forward distribution for the operating mode sample. The correct rate of recognizing the working condition of the sucker rod pump in pumping wells was improved. The recurrent computation greatly reduced the characteristic data of the pump's working condition to be stored and simplified the computation in designing the separator, which makes the adding and correcting of the characteristic data more conveniently. According to the characteristics of the statistical figures of grey level on the dynamograph, a practical design example for four kinds of working conditions of the sucker rod pump is given. (10 refs)

Main heading: Separators

Controlled terms: Calculations - Matrix algebra - Statistical methods - Stresses - Well pumps

Uncontrolled terms: Covariance matrix - Dynamograph - Fisher separator - Grey level - Operating mode - Sucker rod pump - Working condition

Classification Code: 618.2 Pumps - 802.1 Chemical Plants and Equipment - 921.1 Algebra - 922.2 Mathematical Statistics - 931.1 Mechanics

Treatment: Applications (APP)

Database: Compendex

Data Provider: Engineering Village

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19. Mathematical models of directional survey system used in well drilling

Fu, Xin-sheng (1)

Source: *Xi'an Shiyou Xueyuan Xuebao/Journal of Xi'an Petroleum Institute (Natural Science Edition)*, v 10, n 3, 4pp, 1995; **ISSN:** 10015361; **Publisher:** Xi'an Petroleum Institute Journal

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: In surveying the location of drilling tools in the wellbore or downhole, accelerating sensors and magnetic flux sensors used in aviation and space flight industry were used in wells, the depth of which are several thousand meters. The survey accuracy is very high and the work is reliable. Vector analysis method was used to derive the mathematical models of two kinds of electronic instruments for surveying the trajectory of well bore in drilling. The relation among the characteristic parameters which express the space status of well bore's trajectory is discussed in detail in this paper.

Main heading: Directional logging

Controlled terms: Boreholes - Directional drilling - Drilling equipment - Mathematical models - Sensors - Surveying - Surveys - Vectors - Well drilling

Uncontrolled terms: Accelerating sensors - Deviation angle - Directional survey system - Down hole - Drilling tools - Gravity logging - Magnetic flux sensors - Magnetic logging - Well bore - Well bore trajectory

Classification Code: 405.3 Surveying - 512.1.2 Petroleum Deposits : Development Operations - 604.2 Machining Operations - 732.2 Control Instrumentation - 921.6 Numerical Methods

Treatment: Applications (APP) - Theoretical (THR)

Database: Compendex

Data Provider: Engineering Village

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20. High energy gas fracturing (HEGF): Mechanism and practice

Li, Dang (1); Zhao, Gang (1); Yang, Weiyu (1)

Source: *Proceedings of the International Meeting on Petroleum Engineering*, v 2, p 415-422, 1995; **DOI:**

10.2523/29992-ms; **Conference:** Proceedings of the International Meeting on Petroleum Engineering. Part 1 (of 2), November 14, 1995 - November 17, 1995; **Sponsor:** SPE; **Publisher:** Society of Petroleum Engineers (SPE)

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: HGEF, an oil/gas well stimulation technology by means of powder and/or propellant in well to create multiple radial fracture system in the vicinity of wellbore and hence to increase the well production, has been widely tested both home and abroad and shown a bright prospect in oil and gas industry. This paper deals with some fundamental aspects of HEGF, including technology base, key factor of HEGF, influence of HEGF on casing and cement, flow regime of the multiple radial fracture system and the relationship between charging and pressurization. Based on the results of our researches and field applications, we hope that more attention should be paid to this stimulation technology. (12 refs)

Main heading: Fracturing (oil wells)

Controlled terms: Enhanced recovery - Flow of fluids - Natural gas well production - Oil well production - Pressurization - Well stimulation

Uncontrolled terms: High energy gas fracturing - Multiple radial fracture system

Classification Code: 511.1 Oil Field Production Operations - 512.1.1 Oil Fields - 512.2.1 Natural Gas Fields - 631.1 Fluid Flow, General

Treatment: General review (GEN)

Database: Compendex

Data Provider: Engineering Village

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21. Curvature-drift angle controlling method of horizontal well trajectory

Di, Qin-feng (1)

Source: *Xi'an Shiyou Xueyuan Xuebao/Journal of Xi'an Petroleum Institute (Natural Science Edition)*, v 10, n 3, p 28-30, 1995; **ISSN:** 10015361; **Publisher:** Xi'an Petroleum Institute Journal

Author affiliation: (1) Xi'an Petroleum Inst, Xi'an, China

Abstract: A two-section controlling method of controlling the curvature-drift angle is presented in this paper. In this method, controlling started at the initial controlling point and ended at the final controlling point. The section was controlled by two kinds of curvature. The drift angle of the intermediate point in the controlling section was determined according to the features of deviating and the matching curvature of the two deviating sections was found to meet the requirement of controlling. The method of selecting the intermediate point and determining the section is given in the paper. The controlling practice of this method in SP-1 Horizontal well is analysed. The results show that the method is easy, flexible and practical.

Main heading: Horizontal wells

Controlled terms: Control - Controllability - Geometry - Spatial variables control - Spatial variables measurement

Uncontrolled terms: Angle control - Curvature - Curvature drift angle - Drift angle - Horizontal well trajectory

Classification Code: 512.1.1 Oil Fields - 731.1 Control Systems - 731.3 Specific Variables Control - 943.2 Mechanical Variables Measurements

Treatment: General review (GEN)

Database: Compendex

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