

	Sunday	Monday	Tuesday	Wednesday	Thursday
8:00		Registration and Speakers' Breakfast	Registration and Speakers' Breakfast	Registration and Speakers' Breakfast	Registration and Speakers' Breakfast
8:30		IAMG Distinguished Lecturer Roussos Dimitrakopoulos	Vistelius Award 2009 Guillaume Caumon	Keynote speaker Pierre Goovaerts	Environmental Risk Compositional Data Analysis
9:45		Coffee break	Posters	Posters	Coffee break
10:15		Multiscale Modeling Artificial Intelligence Mineral Resources: Regional	Modeling Geological Processes Frontiers in Geostatistics Mineral Resources: reserves	Geostatistics Reservoir Characterization Computational Geosciences	Multivariate Geostatistics Inversion of flow data GIS
12:15		Lunch Break	Lunch Break	Lunch Break	End of technical program
1:30		Multi-point Geostatistics Mineral Resources: fractal/WoE Student Paper Contest	Innovative methods in Hydro Geomath & Energy Resources Sedsim and beyond	Free Afternoon	Short Courses are held Friday August 28
2:30	Coffee break	Posters			
3:00	Registration Welcome Reception	Multi-point Geostatistics Mineral Resources: fractal/WoE Student Paper Contest	Innovative methods in Hydro Geomath & Energy Resources Sedsim and beyond		
6:00			Dinner Banquet Stanford Golf Course	Application of Statistics 3D Modeling Geophysical Inversion	
7:00					
8:00					

Plenary Session
Parallel Sessions
Break
Poster session
Registration

Session: **Multi-Scale Modeling**

Monday, 24 August 2009 Chairs: Sean McKenna (Sandia National Lab), Qiuming Chen (York University)

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- 10:15 – 10:35 Multi-Scale Approach for Dynamic Data Integration Considering Geologically Consistent Flow Functions, **Sanjay Srinivasan (University of Texas, Austin)**
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- 10:35 – 10:55 A Multiscale Method to Large-Scale Inverse Modeling, **Jianlin Fu* and Jef Caers (Stanford University)**
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- 10:55 – 11:15 A Comparison Between Direct Sequential Approach and Error Simulation Approach in Downscaling Continuous Variables, **Yongshe Liu (Conocophillips)**
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- 11:15 – 11:35 Multifractal Dispersion Patterns of Elements in Soils with Different Petrological Backgrounds in Hainan Island, China, **Shuyun Xie* (China University of Geosciences), Qiuming Cheng (York University), Xitao Xing (York University), Zhengyu Bao (China University of Geosciences)**
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- 11:35 – 11:55 Multiscale Behavior of Groundwater Flow and Transport in Binary Media, **Sean McKenna (Sandia National Lab)**
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Session: **Artificial Intelligence Applications**

Monday, 24 August 2009 Chairs: Vasily Demyanov (Heriot-Watt), M. Kanevski (University of Lausanne)

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- 10:15 – 10:35 Permeability Prediction Using Electrofacies and Fuzzy Model in a Heterogeneous Reservoir, **Cheolkyun Jeong***, **Joomyung Kang** and **Changhyup Park (Seoul National University)**
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- 10:35 – 10:55 A Hybrid Approach to Model Selection for Support Vector Classification for Facies Modeling, **Enrique Gallardo*** and **Oy Leuangthong (University of Alberta)**
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- 10:55 – 11:15 Support Vector Machines-Based Porosity Prediction Model in Heterogeneous Reservoir, **Ammal Alanazi* (University of Calgary)**
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- 11:15 – 11:35 Uncertainty Quantification of a Semi-Supervised Support Vector Regression Reservoir Model, V. **Demyanov*** (**Heriot-Watt University**), **A. Pozdnoukhov (NCG, National University of Ireland)**, **M. Christie (Heriot-Watt)**, **M. Kanevski (University of Lausanne)**
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- 11:35 – 11:55 Using Bayesian Belief Networks to Evaluate Continuous Gas Resources (Shale Gas, Tight Gas, and Coal Bed Methane): Tools to Calibrate the Expert and Exploit Knowledge, **Kurt Steffen (ExxonMobil Exploration Company)**
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- 11:55 – 12:15 Rainfall Disaggregation Using co-Kriging and Artificial Neural Network (ANN), **Hassan Derakhshan***, **M.J. Abedini** and **N. Talebbeydokhti (Shiraz University, Iran)**
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Session: **Mineral Resources, Regional Assessment**

Monday, 24 August 2009 Chairs: Donald Singer (USGS), Ryoichi Kouda (Geological Survey of Japan)

10:15 – 10:35 “SP” Areas: A New Approach of Target Delineation in Metallogenic/Mineral Deposit Prediction, Zhao Pengda* (China University of Geology)

10:35 – 10:55 How Many Porphyry Copper Deposits Remain to be Found? Donald Singer* (USGS) and W. David Menzie (USGS)

10:55 – 11:15 Mineral Potential Mapping of Gold and Related Metals in Ancient Crust: Establishing a Metallogenic Fingerprint of the 3.0-3.5 Ga Barberton Greenstone Belt, South Africa, Christien Thiar* and Maarten de Wit (University of Cape Town)

11:15 – 11:35 Spatial Equity Index for Equity Based Resource Allocation, Arif Wismadi* (International Institute for Geo-Information Science and Earth Observation, The Netherlands)

11:35 – 11:55 Assessment Methods of Subsurface Geology and Nickel-Copper Resources by Satellite Remote Sensing and GIS in Botswana and Madagascar, Ryoichi Kouda* (Geological Survey of Japan)

11:55 – 12:15 Quantitative Assessments of Undiscovered Gold Resources in the Victorian Gold Province, Australia, Vladimir Lisitsin*, Avi Olshina, David Moore, Clive William (GeoScience Victoria)

Session: **Multiple-Point Geostatistics**

Monday, 24 August 2009 Chairs: **Sebastien Strebelle (Chevron), Julian Ortiz (University of Chile)**

1:30 – 1:50	Multiple-Point Geostatistics: From Theory to Practice, Sebastien Strebelle* (Chevron)
1:50 – 2:10	A Hierarchical, Extendable, Object-Based Boolean Training-Image Generation Methodology, Aaditiya Satija* and Alexandre Boucher (Stanford University)
2:10 – 2:30	Improving Categorical Multipoint Statistics Algorithms Using a Compact Search Tree, S.I. Pedersen (now with Shell Norway), T. Zhang*, C. Knudby, D. McCormick (Schlumberger-Doll Research)
Coffee Break	
3:00 – 3:20	Conditional Multiple-Point Simulation with a Texture Synthesis Algorithm, Julian Ortiz* and Alvara Para (University of Chile)
3:20 – 3:40	Combining 2D Geologic Maps and 1D Borehole Information to Simulate Non-Stationary 3D Sedimentary Basin, Alexandre Boucher* (Stanford University) and Geoffrey Phelps (USGS)
3:40 – 4:00	An Efficient Approach to Generate Non-Stationary Multipoint Statistics Models by Local Grid Transformation, Tuanfeng Zhang*, Stein Inge Pedersen, Christen Knudby, David McCormick (Schlumberger-Doll Research)

Session: **Mineral Resources, Fractals and Weight of Evidence**

Monday, 24 August 2009

Chairs: Frits Agterberg (Geological Survey of Canada), Graeme Bonham-Carter (Geological Survey of Canada)

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- 1:30 – 1:50 Weighted Weights of Evidence Model for Mineral Potential Mapping, **Zhang Shengyuan*** (Shijiazhuang University of Economics) and **Cheng Qiuming** (China University of Geosciences)
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- 1:50 – 2:10 Fractal-Multifractal Modeling for Predicting Undiscovered Mineral Deposits, **Qiuming Cheng** (China University of Geosciences)
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- 2:10 – 2:30 New Fractal Models for Separation of Different Zones in Porphyry Deposits, **Peyman Afzal*** (Islamic Azad University), **A. Khakzad** (Islamic Azad University), **P. Moarefvand** (Amirkabir University of Technology), **N. Rashidnejad Omran** (Tarbiat Modares University), **Y. Fadakar** (University of Tehran)
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- Coffee Break**
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- 3:00 – 3:20 A Modified Weights-of-Evidence Method for Regional Mineral Resource Estimation, **Frits Agterberg** (Geological Survey of Canada)
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- 3:20 – 3:40 Correction for Bias in Weights-of-Evidence Applications to Assessing Mineral Prospectivity, **Graeme Bonham-Carter** (Geological Survey of Canada), **Frits Agterberg** (Geological Survey of Canada), **Qiuming Cheng** (York University), **Pouran Behnia** (Geological Survey of Iran), **Gary Raines**, **John Kerswill** (Geological Survey of Canada)
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- 3:40 – 4:00 Application of Fuzzy Weights of Evidence Method in Mineral Potential Mapping for Copper in Eastern Tianshan, Xinjiang Province, Northwestern China, **Jingning Huang** (China University of Geosciences)
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- 4:00 – 4:20 Multifractal Simulation for Evaluating Regional Mineral Potential Based on Information-Integration Model, **Lingqing Yao** (China University of Geosciences)
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Session: **Schlumberger Student Paper Contest**

Monday, 24 August 2009

Chair: Sanjay Srinivasan (University of Texas at Austin)

Jury Members: Ricardo Olea (USGS), Vera Pawlowsky-Glahn (President IAMG), and Sean McKenna (Sandia National Lab)

1:30 – 1:50 Prediction the Equivalent Fracture Network Permeability Using Multivariable Regression Analysis and Artificial Neural Networks, **Alireza Jafari (University of Alberta)**

1:50 – 2:10 Multi-Point Modeling of Shale Lenses and Its Impact on Groundwater Flow in Buried Valley Deposits in Denmark, **Whitney Trainor (Stanford University)**

2:10 – 2:30 Finite Element Modeling of Bubble Growth in Soft Fine Grained Sediments, **Christopher Algar (Dalhousie University)**

Coffee Break

3:00 – 3:20 Accounting for Decompaction During 3D Restoration Using Explicit and Implicit Approaches, **Florian Basier (Nancy School of Geology)**

3:20 – 3:40 An Improved Multiple Point Geostatistical Algorithm by Generating New Training Image Patterns in Kernel Space, **Mehrdad Honarkhah (Stanford University)**

3:40 – 4:00 Method to Improve Offshore Wind Energy Resource Assessments Using Cokriging, **Michael Dvorak (Stanford University)**

4:20 Proclamation of 1st Prize Winner

Session: **Modeling of Geological Processes**

Tuesday, 25 August 2009 Chair: Shuyun Xie (China University of Geosciences)

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- 10:15 – 10:35 An Advanced Simulation Model of Carbonate Production Using SIMAFADIM, **Roger Clavera-Gispert*** (Universität Bayreuth), **Ana Carmona** (Universitat de Barcelona), **Raimon Tolosana-Delgado** (Universitat Politecnica de Catalunya), **Telm Bover-Arnal** (Universität Bayreuth), **Oscar Gratacós** (Universitat de Barcelona), **Klaus Bitzer** (Universität Bayreuth)
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- 10:35 – 10:55 Nonlinear Phenomena in the Forming of Sphalerite Dynamic System, **Deyi Xu*** (China University of Geosciences), **Qiuming Cheng** (China University of Geosciences), **Zhijing Wang** (York University), **Wenlei Wang** (York University)
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- 10:55 – 11:15 Multi-Scale Heterogeneity Modeling From Lamina to Reservoir Grid: A Geologic Process Oriented Approach, **Renjun Wen** (Geomodeling Technology)
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- 11:15 – 11:35 Discrete Simulation of Biogeochemical Exchanges in a Microbial Mat, **Damien Chappatte*** and **Eric P. Verrecchia** (University of Lausanne)
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- 11:35 – 11:55 Predicting Decay Dynamics of Rock Materials Using Geostatistics, **Jennifer McKinley*** (QUB), **Stephen McCabe** (QUB), and **Joanne Curran** (Consarc Conservation)
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- 11:55 – 12:15 Mechanical-Mathematical Modeling for Sedimentary Movement and Landslide Processes, **Valentina Svalova*** (Russian Academy of Sciences)
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Session: **Frontiers in Geostatistics**

Tuesday, 25 August 2009 Chairs: Jef Caers (Stanford University), Celine Scheidt (Stanford University)

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- 10:15 – 10:35 A Generalized Linear Model of Coregionalization, **Samuel Elogne and Oy Leuangthong*** (University of Alberta, Canada)
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- 10:35 – 10:55 ODSIM: Conditional Simulation of Complex Geological Structures Using Stochastic Perturbation of Object Distance Functions, **Henrion Vincent***, **Guillaume Caumon**, **Nicolas Cherpeau** (Nancy School of Geology)
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- 10:55 – 11:15 Modeling Uncertainty in Metric Space, **Jef Caers** (Stanford University)
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- 11:15 – 11:35 Conditioning Multiple Realizations to Nonlinear Time-Series Data by Solving a Post-Imaging Problem in Metric Space, **Kwangwon Park*** and **Jef Caers** (Stanford University)
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- 11:35 – 11:55 Higher Order Non-Parametric Conditional Probability Theory for Multiple Point Successions of Rock Categories, **Jose-Antonio Varga-Guzman** (Saudi Aramco)
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- 11:55 – 12:15 Programming Designs for the Advancement of Geostatistical Modeling, **Alexandre Boucher*** (Stanford University) and **Guillaume Caumon** (Nancy School of Geology)
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Session: **Mineral Resources, Reserves Estimation**

Tuesday, 25 August 2009 Chair: Roussos Dimitrakopoulos (McGill University)

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- 10:15 – 10:35 Modeling of Mineral Deposits Using Geostatistics and Experimental Design, **Luis P.V. Braga* (UFRJ), Cassio F. Almeida (IBGE), Claudio Porto (UFRJ), Francisco Silva (UFRJ)**
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- 10:35 – 10:55 Research on Mineral Reserve Calculation Method: Genetic Kriging, **Zhanglin Li (China University of Geosciences), Xialin Zhang* (China University of Geosciences) Chonglong Wu (China University of Geosciences), and Guang Liu (China University of Geosciences)**
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- 10:55 – 11:15 3D Integrated Geological Modeling in Tongshan Copper Deposit, Heilongjiang Province, China, **Gongwen Wang* (China University of Geosciences), Limei Wang (China University of Geosciences), Gen Cui (Heilongjiang Heilong Mining), Chengyin Tan (China University of Geosciences), and Shanyan Jin (Heilongjiang Heilong Mining)**
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- 11:15 – 11:35 Statistical Inference on the Ore-Forming Stage of the Huaaobaote Pb-Zn-Ag Deposit and Establishment of Its Evaluation Criterion for Ore Potential in Depth, **Yongqing Chen (China University of Geosciences)**
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- 11:35 – 11:55 Optimizing the Model of Lateritic Nickel Deposit by Using Multivariate Geostatistics and Land Cover Analysis, **Mohamad Nur Heriawan (Institute Teknologi Bandung, Indonesia)**
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Session: **Innovative Methods for Quantifying Hydrologic Systems**

Tuesday, 25 August 2009 Chairs: **Geoffrey Phelps (USGS), Keith J. Halford (USGS)**

1:30 – 1:50	Using Calibrated Models to Guide Collection of Field Data for Improved Predictions, Claire R. Tiedeman* (USGS), Matthew J. Tonkin (S.S. Papadopoulos & Associates), Mary C. Hill (USGS)
1:50 – 2:10	Causal Factors of Non-Fickian Dispersion Explored Through Measures of Aquifer Connectivity, Sean A. McKenna, Katherine A. Klise (Sandia National Laboratories), Sean A. McKenna (Sandia National Laboratories), Vincent C. Tidwell (Sandia National Laboratories), Jonathan W. Lane (Rice University), Gary S. Weissmann (University of New Mexico), Tim F. Wawrzyniec (University of New Mexico), Elizabeth M. Nichols (University of New Mexico)
2:10 – 2:30	Using Nearest Neighbor, Sequential Indicator Simulation, and Single Normal Equation Simulation Interpolators to Calculate Bulk Hydraulic Conductivity Within an Alluvial Fan, Geoffrey Phelps (USGS)
Coffee Break	
3:00 – 3:20	The Wavelet Approach to Analysis of Urbanized Groundwater Regime, Gleb Batrak (Russian Academy of Science)
3:20 – 3:40	Probabilistic Approach to Forecast of the Risk Caused by Groundwater Contamination at Urbanized Territory, Irina Galitskaya*, Irina A. Pozdnyakova, Leonid S. Toms (Russian Academy of Science)
3:40 – 4:00	Pesticide Transport Modeling in Soil Column and Groundwater Contamination Prediction, S.A. Mirbagheri, S.A. Hashemi Monfared* (K.N. Toosi University of Technology, Iran), A.R. Khalili (Tarbiat Modares University, Iran)
4:00 – 4:20	Coupled THMC Processes in Geological Media Using Stochastic Discrete Fractured Network. Application to HDR Geothermal Reservoirs, Souheil Ezzedine (Lawrence Livermore National Lab)

Session: **Geomathematics and Energy Resources**

Tuesday, 25 August 2009 Chair: Ricardo Olea (USGS)

1:30 – 1:50 Developing a Large Scale Model for the Estimation of Gas Hydrates, **John M. Schuenemeyer*** (Southwest Statistical Consulting), **John Grace** (Earth Science Associates), **Ray Faith** (MIT), **Matt Frye** (U.S. Mineral Management Service), and **Gordon Kaufman** (MIT)

1:50 – 2:10 Issues of Correlation and Aggregation in the Circum-Arctic Assessment, **Donald Gautier** (USGS)

2:10 – 2:30 Orthogonality of Risk Components in Assessment of Hydrocarbon Plays, **John Grace** (Earth Science Associates)

Coffee Break

3:00 – 3:20 Experimental Geostatistical Model of a Continuous Gas Acculation, Rocky Mountain, Utah, **Ricardo Olea***, **Troy A. Cook**, **James L. Coleman** (USGS)

3:20 – 3:40 Modelling and Predictions in the Ketzin CO2 Storage Experimental Site, **Peter Frykman***, **Carsten M. Nielsen** (GEUS), **Ben Norden**, **Andrea Förster** (Helmholtz-Centre Potsdam-GFZ)

3:40 – 4:00 Integrated Risk Evaluation in Value Creation Chain of Optimal Electric Energy Production from Lignite with the Use of Conditional Simulation of a Lignite Deposit Quality Parameters, **Leszek Jurdziak** and **Witold Kawalec*** (Institute of Mining Engineering at Wroclaw University of Technology, Poland)

4:00 – 4:20 The Application of SedSeis in Monitoring of Steam Injection in SAGD Projects, **Xingquan Zhang*** (Roxar Canada)

4:20 – 4:40 Using Computer-Generated Maps as Aids for Estimation of Input Distributions for Hydrocarbon Volume Assessments, **Steven Salzman*** and **John Schuette** (ExxonMobil Exploration Company)

Session: **Modeling of Sedimentary Transport, SEDSIM and Beyond**

Tuesday, 25 August 2009

Chairs: Jan Harff (Szczecin University, Poland), Dan Tetzlaff (Schlumberger), John Harbaugh (Stanford University), Cedric Griffiths (CSIRO Predictive Geoscience Group)

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- 1:30 – 1:50 The CSDMS Project and Submission Standards for Model Source Code, **S.D. Peckham***, **E. Hutton** and **J.P.M. Syvitsk (University of Colorado at Boulder)**
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- 1:50 – 2:10 Modelling Syntectonic Sedimentation: Combining Mechanic and Sedimentary Process-Based Models in 3D, **Ana Carmona* (Universitat de Barcelona)**, **Roger Clavera-Gispert (Universität Bayreuth, Germany)**, **Óscar Gratacós (Universitat de Barcelona)**, and **Stuart Hardy (Universtat de Barcelona)**
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- 2:10 – 2:30 A Combined Geostatistics and Process-Based Methodology for Conditional Simulation of Geologic Heterogeneity, **Holly Michael*** and **Jef Caers (Stanford University)**
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- Coffee Break**
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- 3:00 – 3:20 Construction of Hybrid Geostatistical Models Combining Surface Based Methods with Multiple-Point Geostatistics, **Alejandro Leiva*** and **Tapan Mukerji (Stanford University)**
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- 3:20 – 3:40 Towards Conditioning of Process-Based Geologic Models, **Kaveh Ghayour***, **Tao Sun**, and **James K. Miller (ExxonMobil Upstream Research Company)**
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- 3:40 – 4:00 Modeling of Sandy Pit of the Baltic Sea Coast Using SEDSIM and PRD-LTMM, **Jan Harff* (Szczecin University, Poland)**, **Michael Meyer (Leibniz-Institute for Baltic Sea Research, Germany)**, **Wenyan Zhang (Zhongshan University)**
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- 4:00 – 4:20 The 2009 Status of Sedsim Modelling and Future Plans, **Cedric Griffiths***, **Chris Dyt**, and **Tristan Salles (CSIRO Predictive Geoscience Group)**
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Session: **Geostatistics**

Wednesday, 26 August 2009 Chair: Alexandre Boucher (Stanford University)

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- 10:15 – 10:35 Noise Reduction by M-Factorial Kriging, **Cédric Magneron (Estimages), Jacques Deraismes* (Geovariances), Nicolas Jeannee (Geovariances)**
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- 10:35 – 10:55 Data Transforms and Unbiased Back Transforms in Geostatistics, **Jorge Kazuo Yamamoto* (University of Sao Paulo, Brazil) and Rafael Furuie (Petrobras)**
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- 10:55 – 11:15 Histogram Modelling and Simulations in the Case of Skewed Distributions with a 0-Effect: Issues and New Developments, **Jacques Deraisme* (Geovariances)**
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- 11:15 – 11:35 Multivariate Probability Estimation of Categorical Variables from Marginal Distribution Constraints, **Yupeng Li* and Clayton Deutsch (University of Alberta)**
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- 11:35 – 11:55 Crossvalidation of Cumulative Probabilities for Parameter Selection in Geostatistical Estimation and Simulation, **Ricardo Olea (USGS)**
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- 11:55 – 12:15 A Smart Searching Ellipsoid for More Reliable Ordinary Kriging Estimates, **Xialin Zhang*, Zhanglin Li, Chonglong Wu, S. Dessureault, Zhengping Weng (China University of Geosciences)**
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- 12:15 – 12:35 Edge Effect in Geostatistical Simulations, **Chaoshui Xu (University of Adelaide)**
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Session: **Reservoir Characterization**

Wednesday, 26 August 2009 Chair: Jerry Jensen (University of Calgary)

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- 10:15 – 10:35 Electrofacies Characterization of a Giant North African Petroleum Reservoir, **John Davis and Stefan Egger (Heinemann Oil)**
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- 10:35 – 10:55 Applying Lacunarity Analysis to Complimentary Experimental Stratigraphy Datasets, **Marc L. Buursink*, Martin Perlmutter, and Thomas P. Gerber (Chevron Energy Technology Company)**
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- 10:55 – 11:15 Statistical Analysis of Cyclicity Within Point Bar Deposits, McMurray Formation, **Jerry Jensen (University of Calgary)**
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- 11:15 – 11:35 Geostatistical Analysis of Reservoir Architecture and Pore Volume for Sequestration Target Layers in the Appalachian Basin, **Erik Venteris* (Ohio Department of Natural Resources) and Kristin Carter (Pennsylvania Geological Survey)**
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- 11:35 – 11:55 Reconstruction Sedimentary Architectures of Analogues for Reservoir Models, **E. June Hill* and Cedric M. Griffiths (CSIRO)**
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- 11:55 – 12:15 Statistical Methodds for Identifying Causes of Permeability Heterogeneity in a Fractured Sandstone-Mudrock Rock Mass, **Xia-Wei Jiang**
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Session: **Computational Methods in the Geosciences by Example**

Wednesday, 26 August 2009 Chairs: Yuguang Chen (Chevron), Dongxiao Zhang (University of Southern California)

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- 10:15 – 10:35 Scale-up of Recovery Processes in Heterogeneous Reservoirs, **Juliana Leung*** and **Sanjay Srinivasan (University of Texas, Austin)**
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- 10:35 – 10:55 Efficient Incorporation of Time-Dependent Global Effects in Two-Phase Upscaling of Flow and Transport in Heterogeneous Formations, **Yuguang Chen* (Chevron)**, **Yan Li and Yalchin Efendiev (Texas A&M University)**
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- 10:55 – 11:15 Flow and Radionuclide Transport Calculations for Highly Heterogeneous Radioactive Waste Disposal in Clay, **Alain Genty***, **Christophe Le Potier**, **Stéphane Gounand (Commissariat à l’Energie Atomique)**
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- 11:15 – 11:35 Large-Scale Modeling of 3D Fracture Distributions for Hydrogeological Characterization, **Katsuaki Koike* (Kumamoto University)**, **Chunxue Liu (Yunnan University of Finance and Economics)**, **Alaa Masoud (Tanta University)**, **Kenji Amano and Arata Kurihara (Japan Atomic Energy Agency)**
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- 11:35 – 11:55 Combining Process Models with Geostatistics for Simulating Stratigraphic Surfaces, **Antoine Bertoncello*** and **Jef Caers (Stanford University)**
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- 11:55 – 12:15 Full-Scale Stochastic Modeling, **Artur Mukharlyamov**, **Andrey Bezrukov***, and **Vladimir Savichev (Rosneft)**
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Session: **Application of Statistics in Geosciences**

Wednesday, 26 August 2009

Chairs: Helmut Schaeben (Freiberg University), John Schuenemeyer (Southwest Statistical Consulting)

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- 6:00 – 6:20 Discriminant Analysis Method Applying to Separate the Alteration Zones (Based on Fluid Inclusion Data), **Omid Asghari (Amirkabir University of Technology)**
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- 6:20 – 6:40 Statistical Inference on the Ore-Forming Stage of the Huaaobaote Pb-Zn-Ag Deposit and Establishment of Its Evaluation Criterion for Ore Potential in Depth, **Yongqing Chen (China University of Geosciences)**
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- 6:40 – 7:00 Application of Hilbert-Huang Transform to the Analysis of Geochemical Data, **Jianguo Chen, Xiao Fan, Lijuan H, Yongqing Chen*, Wenjie Shi, Junjie Jin (China University of Geosciences)**
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- 7:00 – 7:20 Using DEM Resampling to Study the Spatial Characteristics of DEM Error, **Steve Wise (Sheffield University)**
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- 7:20 – 7:40 Statistical Analysis of EBSD Data From Single Crystalline Grains, **Helmut Schaeben (Freiberg University)**
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- 7:40 – 8:00 Impact of Decadal and Century-Scale Oscillations on Hydroclimate Trend Analyses, **Zhuoheng Chen* and Steve Grasby (Geological Survey of Canada)**
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- 8:00 – 8:20 Non-Parametric Kernel Density Estimation for $SO(3)$, **Ralf Hielscher (presented by Helmut Schaeben)**
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Session: **3D Modeling**

Wednesday, 26 August 2009 Chair: Guillaume Caumon (Nancy School of Geology)

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- 6:00 – 6:20 Geostatistics Estimation of Contaminated Sediment Volume: Review of Common Challenges and Solutions, **Pierre Goovaerts (BioMedware)**
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- 6:20 – 6:40 Combining Class Transition Probabilities in the Prediction and Simulation of Categorical Fields, **Guofeng Cao (UC Santa Barbara)**
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- 6:40 – 7:00 Stochastic Modeling of Subsurface Heterogeneities in Goettingen Area (Lower Saxony, Germany) Using Markov Chains, **Enayatollah Khojasteh (Georg-August University)**
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- 7:00 – 7:20 Bootstrap Confidence Intervals for Reservoir Model Selection Techniques, **Celine Scheidt* and Jef Caers (Stanford University)**
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- 7:20 – 7:40 3D Geological Model Building from Remote Sensing Data: Implicit Approach, **Julien Clément, Davis Riffault, Christophe Antoine, and Guillaume Caumon* (CRPG-Gocad, Nancy)**
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- 7:40 – 8:00 Stochastic Simulations of Structural Models, **Nicolas Cherpeau* and Guillaume Caumon (CRPG-Gocad, Nancy)**
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- 8:00 – 8:20 Why Doesn't Your Model Pass Information to Mine? **Jeremy Giles (British Geological Survey)**
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Session: **Geophysical Inversion**

Wednesday, 26 August 2009 Chairs: Tapan Mukerji (Stanford University), Mohammad Maysami (Stanford University)

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- 6:00 – 6:20 Seismic Velocity Tomography with a Co-Located Soft Data, **Mohammad Maysami and Bobb Clapp (Stanford University)**
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- 6:20 – 6:40 Application of Particle Swarm Optimization to Reservoir Modeling and Inversion, **Juan Luis Fernández Martínez* (University of Oviedo), David Echeverría Ciaurri (Stanford University), Tapan Mukerji (Stanford University), and Esperanz Garcia Gonzalo**
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- 6:40 – 7:00 Wavelet Transforms and Reduced Complexity Model Parameterizations for Inversion, **Zulima Fernández Muñiz, C. Omar Menéndez Pérez, David Echeverría (Stanford University), Tapan Mukerji (Stanford University), Juan Luis Fernández Martínez (University of Oviedo)**
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- 7:00 – 7:20 Reducing Complexity of Inverse Problems Using Approximations and Geostatistical Priors, **Thomas Mejer Hansen, Klaus Mosegaard, Knud S. Cordua (University of Copenhagen)**
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- 7:20 – 7:40 Physics-Based Earthquake Source Characterization and Modeling for Strong Ground Motion Prediction with Geostatistics, **Seok Goo Song (URS Corporation)**
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Session: **Environmental Risk**

Thursday, 27 August 2009

Chair: Alexandre Boucher (Stanford University)

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- 8:30 – 8:50 Assessing Vulnerability of Aquifers in Buried Valley Deposits: A Case Study from Denmark, **Whitney Trainor*** and **Jef Caers (Stanford University)**
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- 8:50 – 9:10 Regional and National Scale Modeling of Natural Geohazards and Climate Change, **Matt Harrison (British Geological Survey)**
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- 9:10 – 9:30 Using Positive and Negative Evidences of Contamination to Evaluate Groundwater Vulnerability, **Marco Masetti (Universta degli Studi de Milano)**
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Session: **Compositional Data Analysis**

Thursday, 27 August 2009

Chairs: John Doveton (Kansas Geological Survey), John Davis (Heinemann Oil)

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- 8:30 – 8:50 CoDaPack 3D. New Features of Compositional Data Package, **Santiago Thió-Henestrosa (Universitat de Girona) presented by Juan José Egozcue* (Universitat Politècnica de Catalunya)**
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- 8:50 – 9:10 Compositional Data Analysis of the Mineralogy and Geochemistry of Soil and Stream Sediment Samples Along an East-West Continental-Scale Transect in the United States, **Lawrence J. Drew* (USGS), Eric C. Grunsky (Geological Survey Canada), David M. Sutphin (USGS), and Laurel G. Woodruff (USGS)**
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- 9:10 – 9:30 Redundancy and the Tau-Method from a Compositional Point of View, **Juan José Egozcue* (Universitat Politècnica de Catalunya) and Vera Pawlowsky-Glahn (Universitat de Girona)**
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- 9:30 – 9:50 Compositional Data Analysis of Shaly Sandstones from Petrophysical Logs in Oil and Gas Reservoirs, **John Doveton* (Kansas Geological Survey)**
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Session: **Multivariate Geostatistics**

Thursday, 27 August 2009

Chairs: Pierre Goovaerts (Biomedware), Oy Leuangthong (University of Alberta)

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- 10:10 – 10:30 On the Selection of Secondary Variables for Co-Simulation, **Miguel Cuba*** (University of Alberta), **Olena Babak** (Total E&P Canada Ltd.), **Oy Leuangthong** (University of Alberta)
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- 10:30 – 10:50 Using Direct Sequential Co-Simulation for Soil Characterization, **Ana Horta*** and **Amilcar Soares** (Instituto Superior Técnico, Portugal)
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- 10:50 – 11:10 Spatio-Temporal Stochastic Modelling of Alluvium Soils Contaminated by Heavy Metals, **Maria T.D.* Albuquerque**, (Escola Superior de Tecnologia do Instituto Politécnico de Castelo Branco, Portugal), **M.C.R. Silva** (Universidade de Lisboa, Portugal)
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- 11:10 – 11:30 How can Multivariate Geostatistics Benefit Precision Farming, **Ruth Kerry*** (Brigham Young University), **Pierre Goovaerts*** (Biomedware Inc.), **Barry Rawlins** (British Geological Survey), and **Ben Marchant** (Biomathematics and Bioinformatics, Rothamsted Research, UK)
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- 11:30 – 11:50 A Stochastic Simulation Algorithm for Image Data Fusion, **Maria Pereira** (Instituto Superior Técnico, Portugal)
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- 11:50 – 12:10 Combining Class Transition Probabilities in the Prediction and Simulation of Categorical Fields, **Guofeng Cao** (UC Santa Barbara)
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- 12:10 – 12:30 Application of Multivariate Space-Time Geostatistics to Simulate the Space-Time Distribution of Water Quality in an Inland Lake, **Chunxue Liu**
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Session: **Inverse Modeling of Flow in Porous Media**

Thursday, 27 August 2009

Chairs: Lin-Ying Hu (Conocophillips), Jaime Gomez-Hernandez (Universidad Politécnica de Valencia, Spain)

10:10 – 10:30 A Stochastic Collocation Based Kalman Filter for Data Assimilation, **Dongxiao Zhang*** and **Lingzao Zeng (USC)**

10:30 – 10:50 Geologically-Consistent History Matching of Fine-Grid, Naturally Fractured Reservoirs, **Darryl Fenwick***, **Marco Thiele (Streamsim Technologies)**, and **Jef Caers (Stanford University)**

10:50 – 11:10 Adaptive Local Parameterization of Facies Proportions for the History Matching of Production and Time Lapse Saturation Data, **Veronique Gervais (IFP)**

11:10 – 11:30 History Matching with the Wrong A Priori Model, **Jaime Gomez-Hernandez***, **H. Zhou (Universidad Politécnica de Valencia, Spain)**, and **Jianlin Fu (Stanford University)**

11:30 – 12:10 Discussion on Flow-Related Inverse Modeling Techniques, moderated by **Lin-Ying Hu (Conocophillips)**

Session: **Geographical Information System**

Thursday, 27 August 2009

Chair: Walter Stromquist (Swarthmore College)

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- 10:10 – 10:30 The Real Meaning of Geoscience Data and Process Integration, Khalid Amin Khan* (K-tron Research, Pakistan), Gulraiz Akhter and Zulfiqar Ahmad (Quaid-i-Azam University, Pakistan)
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- 10:30 – 10:50 Delineation and Geometric Characteristics of Catchment Area and Watershed for Wadi Ubaiydh Western Desert of IRAQ Using Arc GIS Hydro Tools, Sameh Al-Muqdad
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- 10:50 – 11:10 Development of a 3D GIS Based Tunnel Design Support System for Rock Mass Classification and Fault Zone Analysis in Tunneling, Yosoon Choi (Seoul National University)
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- 11:10 – 11:30 N-Dimension GIS, John D. Grace (Earth Sciences Associates) and Walter Stromquist* (Swarthmore College)
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Trace Element Abundance and Human Epidemiology in Northern Ireland – The Tellus Case Study
Amy Barsby, Queens University Belfast

Comparison of Local Singularity Models and Anomaly Contrast Models for Anomaly Recognition of Geochemical Data
Zhijun Chen, China University of Geosciences (Wuhan)

The Role of Natural Resources in Economic Growth—The Comparison Among Different Nations' Economic Growth Based on Resource Abundance
Hong He, China University of Geosciences, Beijing

A Method of Seismic Random Noise Blind Separation Based On JADE
Guo Ke, Information Management Institution, Chengdu University of Technology

Statistical Estimation of Spatially Varying Geotechnical Properties for Field applications
Hyun-ki Kim, Kookmin University, Korea

Multiple-Point Simulation Applied to Uncertainty Analysis of Reservoirs Related to High Sinosity Fluvial Systems
Claudio Larriestra, Geotecnologias SA

Automatic Modeling of Experimental Semivariogram and Its Application in the Study of Water Quality of Dianchi Lake
Lv Lei, Yunnan University of Finance and Economics

Modeling 3D Groundwater Flow with Full Tensor Conductivities
Liangping Li, Jaime Gomez-Hernandez, Technical University of Valencia

Numerical Modeling of the Change of Rock Structure in a Coupled Fracture-Matrix System
Qi Li, National Institute of Advanced Industrial Science and Technology (AIST)

Artificial Neural Network Approach to Selection of EOR Method
Jong-Se Lim, Korea Maritime University

Application of Kalman Filter in Geochemistry Elements Noise Reduction
Chen Ling, Information Management Institution, Chengdu University of Technology

Design of Geological Hazard Information 3D Visualization and Analysis System in Three Gorges Reservoir Area of China
Gang Liu, China University of Geosciences

Upscaling, Transport and Memory
Geronimo Llerar, Jaime Gomez-Hernandez, Gpo. de Hidrogeología, Dep. de Ing. Hidráulica, Universidad Politécnica de Valencia

Use of Bézier and B-Spline Curves for Smart Representation of Lineaments Auto-Detected from DEM
**Alaa MASOUD (Geology Department, Faculty of Science, Tanta University, EGYPT)
Katsuaki Koike (Kumamoto University)**

Effect of Cracks in Artificial Sealing of a Capillary Barrier and the Reliability of Its Numerical Modelling

Jiri Mls, Charles University

Bootstrap Estimation of Uncertainty in Chemical Weathering Model

Seulgi Moon, Stanford University

Aeolian Sediment Transport Integration in General Stratigraphic Forward Modelling

Tristan Salles, CSIRO

Wavelet Analysis of Geophysical Data and its Application for Copper Mineral Deposits Forecast in Mandamah Area, Australia

Wei Shen, China University of Geosciences, Beijing

Study on Quantity-quality Grade Conversion Coefficient of Supplementary Cultivated Land in Jiangnan Plain

Hu Shougeng, China University of Geosciences

Physics-Based Earthquake Source Characterization and Modeling for Strong Ground Motion Prediction with Geostatistics

Seok Goo Song, URS Corporation

Obtaining Local Proportions from Coarse-Scale Soft Attributes Through a Multi-Scale, Multi-Attribute Calibration

Lisa Stright, Stanford University

Estimation of River Bed Morphology Using S-PLUS

Budhi Kuswan Susilo, Sriwijaya University Indonesia

Finite-Element Numerical Simulation of Transient Electromagnetic Diffusion in the Earth

Evan Um, Stanford University

Meandering Channel Reservoir Modeling with Self-Avoiding Random Walk

Jiahua Wang, Xi'an Shiyou University, China

3D Modeling of Palaeogeomorphology Reconstruction of Xishanyao Formation Depositional Stage in Junggar Basin, Northwest China

Minfang Wang, Faculty of Earth Resources, China University of Geosciences

Application of P-A Model to Charactering Micro-Texture of Fluid Inclusions

Qinglin Xia, China University of Geosciences

Mapping Prospectivity for Metamorphosed Sedimentary Iron Deposits in Eastern Hebei Province, China

Renguang Zuo, China University of Geosciences (Wuhan)

Upscaling, Flow and Tensors

Haiyan Zhou, Jaime Gomez-Hernandez, Technical University of Valencia

PLENARY SESSIONS

Monday, 24 August 2009

8:30 – 4:45 Welcome and Introduction: Jef Caers (Stanford University), Chair IAMG 2009

8:45 – 9:45 **IAMG Distinguished Lecturer:** Roussos Dimitrakopoulos (McGill University)
“High Order Geostatistics: Simulating Complex, Non-Gaussian Geological and Environmental Phenomena”

Tuesday, 25 August 2009

8:30 – 9:45 **2009 Vistelius Award** Ceremony and Laudatio: Guillaume Caumon (Nancy School of Geology)
“Towards 5D Geological Modeling”

Wednesday, 26 August 2009

8:45 – 9:45 **Keynote Address:** Pierre Goovaerts (Biomedware Inc.)
“Combining Areal and Point Data in Geostatistical Interpolation: Applications to Soil Science and Medical Geography”
