Society of Exploration Geophysicists
The international society of applied geophysics

Preliminary Program of GEM Beijing 2011

International Workshop on Gravity, Electrical & Magnetic Methods and Their Applications

International Conference Center at China University of Geosciences

Beijing, China October 10-13, 2011

Monday October 10, 2011	
09:00 - 19:30	Registration opens
18:00 - 19:30	Icebreaker
Tuesday October 11, 2011	
8:00	Registration opens
08:30 - 12:05	**Opening Ceremony and Plenary Session** (Chairs: Xiong Li, Yaoguo Li and Xiaohong Meng)
08:30 - 09:00	Welcome Addresses
09:00 - 10:00	**SEG Honorary Lecture**: Integrating well log, seismic, and CSEM data for reservoir characterization. *Lucy MacGregor*
10:00 - 10:30	Workshop photo and morning tea
10:30 - 11:30	**SEG Honorary Lecture**: Building on 3D geological knowledge through gravity and magnetic modeling workflows at regional to local scales. *Richard Lane*
11:30 - 12:05	**Keynote address**: The new development trends of the airborne geophysical technology in China. *Shengqing Xiong*
12:05 - 13:30	Lunch, exhibition and poster viewing

	Poster Session PA: Gravity and Magnetic Methods (Chairs: Danian Huang and Minghua Zhang)	**Poster Session PB: Electromagnetic Methods** (Chairs: Xuben Wang and Changchun Yin)
13:30 - 13:40	Application of fractal interpolation for gravity data fitting in mountainous areas. *Feng Xiao, Wencheng Li, Fenggang Wang, and Mengen Liu*	The framework design of geophysical modeling and inversion based on object-oriented method. *Zhiyong Zhang*
	3D geological model of Shizishan ore field constrained from gravity and magnetic interactive inversion: A case history. *Qingtian Lu, Jiayong Yan, and Guang Qi*	Extracting the virtual reflected wavelet from the TEM data based on regularizing method. *Guo-qiang Xue, Xiu Li, Nannan Zhou, and Jun Zhang*
13:40 - 13:50	Gridding aeromagnetic data using inverse interpolation. *Lianghui Guo, Xiaohong Meng, and Lei Shi*	Three-dimensional inversion of CSAMT data using conjugate gradient method. *Changhong Lin, Handong Tan, and Tuo Tong*
	Edge detection and recognition based on structure tensor. *Wen-na Zhou*	The contrast of response characteristics between large power long bipole and circle current source. *Cheng Xu, Qingyun Di, and Miaoyue Wang*
13:50 - 14:00	How to avoid distortion and improve efficiency on gridding of scattered data. *Changli Yao, Chen Zhang, Yuanman Zheng, Yongmao Xie, and Huliang Guan*	Research on parallel 3D magnetotelluric forward modeling and inversion on multi-processing cores platform. *Guanwen Gu, Wenli Wu, and Meng Liang*
	3D fast correlation imaging for large-scale aeromagnetic gradient data using GPU/CPU parallel computing. *Zhaoxi Chen, Lianghui Guo, Xiaohong Meng, and Guofeng Liu*	Forward modeling of the three-dimensional integral equation based on Born approximation. *Ronghui Xue, and Qingyun Di*
14:00 - 14:15	Continue exhibition and poster viewing and discussions (posters on display all day)	
14:15 - 14:20	Preparation for start of the oral sessions	
	Session A: Parallel and GPU Computation (Chairs: Hans-Jürgen Götze and Qingtian Lu)	**Session B: Geothermal Field and Magnetotelluric Method** (Chairs: Wenbao Hu and Max Meju)
14:20 - 14:45	Massively parallel 3D regularized inversion of gravity and magnetic data. *Michael S. Zhdanov, Martin Čuma, Glenn A. Wilson, and Le Wan*	Comparisons of the magnetotelluric experimental results by multi-site remote reference and multi-site superposition. *Li Jiang, and Yixian Xu*
14:45 - 15:10	The gravity and seismic sequential inversion and its GPU implementation. *Guofeng Liu, Xiaohong Meng, and Lianghui Guo*	Progress towards magnetotelluric time lapse monitoring of enhanced geothermal system fluids. *Jared Peacock, Stephan Thiel, Graham Heinson, and Peter Reid*

15:10 - 15:35	Large scale three-dimensional electromagnetic inversion on GPU clusters. *Shangli Ou, Dennis Willen, and Alexander Langwost*	Integrated geophysical surveys to characterize Tendaho geothermal field in northeastern Ethiopia. *Yohannes Lemma, Aklilu Hailu, and Ulrich Kalberkamp*
15:35 - 15:50	Afternoon tea	
	Session C: Gravity and Magnetics for Regional Studies (Chairs: Hans-Jürgen Götze and Qingtian Lu)	**Session D: Electromagnetic Processing** (Chairs: Wenbao Hu and Max Meju)
15:50 - 16:15	Reprocessing of Iraq magnetic and gravity data. *Kaxia Lei, J. Derek Fairhead, Tom Kerrane, and Khaldoun Al-Bassam*	The study of near reference technique in CSAMT. *Liangjun Yan, Wenbao Hu, Xingbing Xie, and Zhenwei Xu*
16:15 - 16:40	Towards a synoptic interpretation of the gravity field in the Dead Sea Rift Basin. *Hans-Jürgen Götze, Uwe Meyer, Sungchan Choi, and Sabine Schmidt*	Research on TEM pulse compression technique. *Zhi-peng Qi, Xiu Li, and Huai-feng Sun*
16:40 - 17:05	Gravity anomaly separation and extraction of information for the Moho undulations in the South China Sea. *Jinyao Gao, Zhaocai Wu, Tao Zhang, Chunguo Yang, Zhongyan Shen, and Zhiyuan Zhou*	Application of mathematical morphology filtering method in noise suppression of magnetotelluric sounding data. *Jingtian Tang, Jin Li, Xiao Xiao, Lincheng Zhang, and Qingtian Lu*
17:05 - 17:30	Crustal thickness beneath the Red Sea derived from satellite gravity data. *Ahmed Salem, Chris Green, J. Derek Fairhead, Lorenzo Cascone, Lee Moorhead, and Simon Campbell*	Improved resolutions of differential apparent longitudinal conductance imaging using TEM synthetic aperture algorithm. *Huai-feng Sun, Shu-cai Li, Mao-xin Su, Yi-guo Xue, Wen-jun Zhang, Xiu Li, Zhi-peng Qi, and Jian-bing Qian*
18:00 - 19:30	Buffet dinner	
19:00 - 20:30	An Informal Discussion on Publishing in International Journals - for Geophysicists in China	
Wednesday October 12, 2011		
08:30 - 10:15	**Plenary Session** (Chairs: Xiong Li and Yaoguo Li)	
08:30 - 09:05	**Keynote address**: Airborne electromagnetic surveys: A quantitative tool for groundwater management. *Jared D. Abraham, James C. Cannia, and Burke J. Minsley*	
09:05 - 09:40	**Keynote address**: How to get twice as much exploration value from aeromagnetic surveys. *David Isles, and Leigh Rankin*	
09:40 - 10:15	**Keynote address**: Joint multi-geophysical inversion: Effective model integration, challenges and directions for future research. *Max Meju*	
10:15 - 10:30	Morning tea	
	Session E: Marine Controlled Source ElectroMagnetics (Chairs: Zhanxiang He and Dennis Willen)	**Session F: Gravity and Magnetic Processing and Interpretation** (Chairs: Juzhi Deng and Pierre Keating)

10:30 - 10:55	Analysis of the mechanism of air wave interaction and the effect of the sea water depth on the marine controlled source electromagnetic exploration. *Jinsong Shen, Linsen Zhan, Wei Zhao, and Jicai Ding*	Comparison of some commonly used regional residual separation techniques. *Pierre Keating, Nicolas Pinet, and Mark Pilkington*
10:55 - 11:20	A parallel finite-element method for 3-D marine controlled-source electromagnetic forward modeling. *Jelena Koldan, Vladimir Puzyrev, José María Cela, Josep de la Puente, and Francisco Ortigosa*	Research on the altitude correction of aeromagnetic data. *Changli Yao, Xulin Pang, Yuanman Zheng, Qishan Zhou, and Hongwei Li*
11:20 - 11:45	3D inversion of towed streamer EM data – A model study of the Harding field and comparison to 3D CSEM inversion. *M. S. Zhdanov, Bruce A. Hobbs, Masashi Endo, Leif H. Cox, Noel Black, Alexander V. Gribenko, Martin Cuma, Glenn A. Wilson, and Ed Morris*	Depth characterization of the extended geological sources using continuous wavelet transform. *Palkesh Goyal*
11:45 -12:10	Effective 3D interpretation of marine CSEM data: Practical considerations and the way forward. *Max Meju*	On 3D simultaneous modeling of gravity fields, FTG and magnetic fields – the software package IGMAS+. *Sabine Schmidt, Bernd Lahmeyer, Hans-Jürgen Götze, and Wolfgang Szwillus*
12:10 -13:30	Lunch, exhibition and poster viewing	
	Poster Session PC: Instrumentation and Case Studies (Chairs: Qinyong Yang and Changli Yao)	**Poster Session PD: Electromagnetic Methods** (Chairs: Xiu Li and Jingtian Tang)
13:30 - 13:40	A Three-component aeromagnetic compensation for UAV platform. *Baogang Zhang, Ziqi Guo, Leiqi Zhu, and Yanchao Qiao*	Integrated exploration for volcanic rocks and basement configuration with MT method. *Weibin Sun, Dechun Li, and Xiaofang Xu*
	Three-dimensional density distributions of the Asian lithosphere. *Chuantao Li, Guibin Zhang, Xinsheng Wang, Zhengkai Wang, and Jian Fang*	Correlation analysis and imaging technique of TEM data. *Xiu Li, Guoqiang Xue, and Nannan Zhou*
13:40 - 13:50	An effective search coil magnetometer for geomagnetic measurement. *Xiaomei Wang, Yuntian Teng, Chen Wang, Xiaoyong Fan, and Lian Zhang*	Complex resistivity characteristics of volcanic rocks with different water salinity and oil saturation. *Baihong Wen, Hui Yang, Yan Zhang, Yunsheng Zhao, and Zhanshan Xiao*
	Capability of crossed square array in detecting concealed faults an determining their orientation: a case study in Shahrood, north central of Iran. *R. Alipour-kafshgar, H. Mardomi, A. Moradzadeh, and M. K. Hafizi*	Three-dimensional inversion of controlled source electromagnetic method. *Aihua Weng, Yunhe Liu, Dingyu Jia, and Changchun Yin*

13:50 - 14:00	A new development of absolute gravimeter. *Qiong Wu, Yuntian Teng, Youguan Guo, Jianfeng Long, and Xiaomei Wang*	The experimental study of high-frequency MT method in LengShuiKeng ore-concentrated Areas. *Hui Chen, Juzhi Deng, Genxian Fang, Peng Ni, and Haiyan Yang*
	Through wall detection of human being's movement by UWB radar. *Jing Li, Zhaofa Zeng, Jiguang Sun, and Fengshan Liu*	Computation of effective conductivity of multiphase stochastic medium by 3D finite difference resistivity modeling and inversion. *Xiaoping Wu, Jingjin Lu, and Yong Yu*
14:00 - 14:15	Continue exhibition and poster viewing and discussions (posters on display all day)	
14:15 - 14:20	Preparation for start of the oral sessions	
	Session G: Environmental, Geotechnical and Hazard Applications (Chairs: Qingyun Di and Carol Finn)	**Session H: Groundwater Applications** (Chairs: Ross Brodie and Ping Hu)
14:20 - 14:45	Applications of mobile time-domain EM system for conductivity mapping. *Todd Meglich, Norman Carlson, and Scott Urquhart*	Geoelectrical evidence for negative flower structure: a case study in Hadishahr, north west of Iran. *H.Mardomi, R.Alipour-Kafshgar, M.Faridi, and A.Moradzadeh*
14:45 - 15:10	Application of electromagnetic method in detecting structure of rock mass at the preselected site. *Hua Zhang, Yu-ling Gong, Qing-cheng Liu, and Ju-zhi Deng*	Ground water assessment using integrated geophysical techniques in an industrial cluster near Jaipur in Rajasthan. India, *C. Padmakar, P. R. Pujari, G. K. Khadse, P. M. Patni, and Pawan K. Labhasetwar*
15:10 - 15:35	Geophysical investigation on geological structures with different scale in preselected areas of high level radioactive waste. *Qingyun Di, Zhiguo An, Ruo Wang, and Miaoyue Wang*	The use of CSAMT and NSAMT in siting groundwater production wells: two case histories. *Norman R. Carlson, Charles F. Feast, Greg L. Bushner, and Ryan Hoerth*
15:35 - 15:50	Afternoon tea	
	Session I: Environmental, Geotechnical and Hazard Applications (Chairs: Qingyun Di and Carol Finn)	**Session J: Regional Mapping** (Chairs: Ross Brodie and Ping Hu)
15:50 - 16:15	Helicopter magnetic and electromagnetic surveys at Mounts Adams, Baker and Rainier, Washington: Implications for debris flow hazards and volcano hydrology. *Carol A. Finn, and Marya Deszcz-Pan*	Mineral potential of Rwanda: Prospective target areas at depth as interpreted from airborne gravity and aeromagnetics. *D. James Misner, Michael Biryabarema, and Sally Barritt*
16:15 - 16:40	Karst cavity mapping using CSAMT: A case history of tunel investigation in China. *Lanfang He, Xiumian Hu, Ligui Xu, Xuben Wang, Jian Li, Xuyou Lei, and Donghua Wei*	Identifying geological structural complexity using aeromagnetic data: Application to gold exploration. *Eun-Jung Holden, Mike Dentith, and Peter Kovesi*

16:40 - 17:05	High frequency electromagnetic and DC resistivity monitoring system for near real-time earthquake–induced landslides assessment. *Dragos Armand Stanica, and Dumitru Stanica*	Gravity and magnetic multi-scale edge detection and its application on tectonic framework research of the lower and middle reaches of the Yangtze River metallogenic belt, China. *Jiayong Yan, Qingtian Lu, Zhen Deng, Guixiang Meng, Yan Liu, and Jinghua Zhao*
17:05 - 17:30		Automated detection of responses from porphyry-style mineralisation within magnetic data. *Eun-Jung Holden, Shih-Ching Fu, Peter Kovesi, Mike Dentith, Matthew Hope, and Barry Bourne*
18:30 - 21:00	Workshop banquet	
Thursday October 13, 2011		
	Session K: Airborne Gravimetry and Airborne Gravity Gradiometry (Chairs: Guy Flanagan and Shengqing Xiong)	**Session L: Electromagnetic Modeling** (Chairs: Klaus Spitzer and Yixian Xu)
08:30 - 08:55	SGL AIRGrav anomaly detection from modeling and field data using advanced acquisition and processing. *Stephan Sander, Luise Sander, and Stephen Ferguson*	Electromagnetic response modeling of ELF electromagnetic method and the analysis of ionosphere effect. *Yong Li, Pin-rong Lin, and Bao-li Xu*
08:55 - 09:20	Gravity gradiometry: Systems, applications, and future prospects. *Daniel DiFrancesco*	"Earth-ionosphere" mode electromagnetic forward modeling. *Diquan Li, Qingyun Di, and Miaoyue Wang*
09:20 - 09:45	Airborne gravity gradiometry – the state of the art. *Mark Dransfield*	Simulation of borehole-to-ground resistivity surveys in 2D complicated media using an adaptive hp finite element method. *Zhengkai Wang, and Guibin Zhang*
09:45 -10:10	Practical issues in the processing and inversion of airborne gravity gradiometry data. *Yaoguo Li, M. Andy Kass, Cericia Martinez, Kristofer Davis, and Marco Braga*	A coupled finite-infinite element method for three-dimensional electromagnetic forward modeling. *Jingtian Tang, Lincheng Zhang, and Jinzhe Gong*
10:10 -10:25	Morning tea	
	Session M: New Acquisition Technologies (Chairs: Guy Flanagan and Shengqing Xiong)	**Session N: Electromagnetic Modeling** (Chairs: Klaus Spitzer and Yixian Xu)
10:25 - 10:50	Slow motion: Observing long periods with gravity sensors. *Chris Nind, Tim Niebauer, Jeff MacQueen, and Jennifer Hare*	3D DC anisotropic resistivity modeling using unstructured finite element method. *Wei Wang, Xiaoping Wu, and Klaus Spitzer*
10:50 - 11:15	Unmanned aerial vehicles for rapid near surface geophysical measurements. *Johannes B. Stoll*	The Simulation of 2.5D complex resistivity model with finite element method. *Cuisong Fan, and Tonglin Li*

11:15 - 11:40	Transmission power design for the wild field electromagnetic transmitter. *Qiyun Jiang, Jing Pei, and Dan Huang*	Transient electromagnetic fields: their efficient three-dimensional simulation and application to borehole-based observation techniques. *Martin Afanasjew, Jana Börner, Ralph-Uwe Börner, Michael Eiermann, Oliver Ernst, and Klaus Spitzer*
11:40 - 12:05	Broadband, high resolution receiver for electromagnetic investigations. *Scott Urquhart, and Adam Schultz*	VTI equivalents for the laminated layers: Parametric study using one-dimensional CSAMT responses. *Yali Kong, Yixian Xu and Zhanxiang He*
12:05 - 13:30	Lunch	
	Session O: Exploration under Cover and at Depth (Chairs: Michel Chouteau and Guimin Liu)	**Session Q: Gravity and Magnetic Inversion** (Chairs: Richard Krahenbuhl and Yan Zhang)
13:30 - 13:55	Three-dimensional magnetotelluric inversion of large data sets: Case study of Pasfield Lake (Saskatchewan) for mineral exploration. *Sophie Hautot, David Goldak, Pascal Tarits, and Peter Kosteniuk*	3-D inversion of gravity density interface in Hartley domain. *Yao Luo*
13:55 - 14:20	Deep copper deposit exploration by CSAMT in Jiang-Shao fault zone. *Chuan-tao Yu, and Hong-Fu Liu*	Non-uniqueness in potential field inversion with application to the Potiguar Basin. *Robert G Ellis, and Ash Johnson*
14:20 - 14:45	Application of CSAMT in mineral exploration: A case study in Longmen, Guangdong Province. *Xiangyun Hu, Weiping Wang, Gujiu, Chengping Wu, and Guangpu Huo*	The role of the wavelet transform in potential-field inversion techniques. *Kristofer Davis, and Yaoguo Li*
14:45 - 15:10	Large-scale inversion of ZTEM data. *Elliot Holtham, and Douglas W. Oldenburg*	3D stochastic joint inversion of geophysical data. *Pejman Shamsipour, Denis Marcotte, and Michel Chouteau*
15:10 - 15:35	3D inversion of ZTEM and AirMt data – A case study from the Nebo-Babel Ni-Cu-PGE deposit, West Musgrave, Western Australia. *Alexander V. Gribenko, Michael S. Zhdanov, Martin Čuma, Leif H. Cox, Glenn A. Wilson, and Jean Legault*	Joint 3D inversion of muon tomography and gravity data. *Kristofer Davis, Douglas W. Oldenburg, Vlad Kaminski, Mark Pilkington, Douglas Bryman, James Bueno, and Zhiyi Liu*
15:35 - 15:50	Afternoon tea	
	Session R: Electromagnetic Inversion (Chairs: Michel Chouteau and Guimin Liu)	**Session S: Gravity and Magnetics for Oil and Gas Applications** (Chairs: Richard Krahenbuhl and Yan Zhang)

15:50 - 16:15	One-step calibration, processing, and quantitative interpretation of airborne electromagnetic data via holistic inversion. *Ross C. Brodie*	Effective depth imaging through integrated modeling and its implications on deeper hydrocarbon prospectivity in Kuwait. *Parmjit Singh, Riyasat Husain, and Abdulaziz Al-Fares Mohammed*
16:15 - 16:40	MT inversion for anisotropic conductivities in layered media. *Guangpu Huo, Xiangyun Hu, Hui Fang, and Yifan Huang*	Aeromagnetic anomalies, distribution of Carboniferous volcanic rocks and hydrocarbon accumulations in the Junggar Basin, northwest China. *Hui Yang, Bai-hong Wen, Yan Zhang, and Yan-dong Li*
16:40 - 17:05	Compressive inversion: A general framework for inverting large-scale multichannel geophysical data. *M. Andy Kass, and Yaoguo Li*	Regularization, model weighting and solution appraisal in binary inversion for time-lapse gravity monitoring. *Richard A. Krahenbuhl, and Yaoguo Li*
17:05 - 17:30		Validation and application of magnetic anomalies for directional drilling. *Benny Poedjono, and Xiong Li*
18:00 - 19:30	Buffet dinner	