CHEN Zhi-Jun


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Dr. Zhijun Chen, Associate Professor in Mathematical Geology
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Presentations

Zhijun Chen, Qiuming Cheng, Frits Agtergerg, 2015. A rapid local singularity analysis algorithm with applications. Geophysical Research Abstracts, Vol. 17, EGU2015-PREVIEW, 2015, EGU General Assembly 2015, Vienna, Austria, 12-17 April 2015: Posters / Attendance Thu, 16 Apr 2015, 17:30–19:00 / Yellow Posters >> Poster | Video

My Profile

Research Interests

- geostatistics, multifractals, local singularity analysis and weak information extraction in geosciences
- complexity of metallogenic system, quantitative prediction and assessment of mineral resources
- geo-computation, GIS cartography, geologic mapping
- fliped classroom, game-based learning in education

Education Background

- 2003.09-2007.06, Ph.D., China University of Geosciences (Wuhan), 2005.08-2006.02, visiting student at York University, Canada
- 2001.09-2002.06, M.Sc., China University of Geosciences (Wuhan), Exam-freely upgrade to Ph.D. program in Sept., 2003.
- 1997.09-2001.06, B.S., China University of Geosciences (Wuhan), Exam-freely upgrade to M.Sc. program in Sept., 2001.

Professional Experience

- 2009.12-present, Faculty of Earth Resources, CUG(Wuhan), associate professor
- 2007.07-2010.05, Faculty of Earth Resources, CUG(Wuhan), lecturer

Society Membership

- Member of the International Association for Mathematical Geosciences (IAMG, http://www.iamg.org)

Professional Affiliation

- 2009.07-present, Secretary-General, The Topical Section of the IAMG for Chinese Members
- 2005.07-2009.09, Student Member of IAMG Student Affaires Committee
- 2006.07-present, Honorary adviser of IAMG Student Chapter at CUG (IAMG-SCC)
- 2004.12-2006.07, The first President, IAMG Student Chapter at CUG (IAMG-SCC)

Skills

- familiar with the C++, Python, MATLAB, Mathematica, IDL programming languages and masters various GIS, RS softwares, such as ArcGIS, MAPGIS, ENVI.
- one of the main developers of some professional softwares: GeoDAS, MORPAS, GeoWLDBS, GeoTMDBS

My Teachings

Undergraduate Courses

- *Statistical Prediction of Ore Deposites* [See Online SPOD](#)

Teaching Projects

- 2011.06-2014.05 Practical exploration into the research-based learning mode for Statistical Prediction of Ore Deposites based on Cloud Computing Assisted Instruction (CCAI), General education reform project of university level B (2011B11). [Report](#)

Eduction Awards

- 2014.12, Leiboxingda teaching prize in 2014, Faculty of Earth Resources at CUG
- 2013.12, the 3rd prize, National essay contests on educational technology in 2013, Chinese Association for Educational Technology
- 2012.12, the 2nd prize, National essay contests on educational technology in 2012, Chinese Association for Educational Technology
- 2011.01, Honorable mention, The 3rd teaching competition for young teachers of CUG, CUG(Wuhan)
- 2009.12, the first prize, National essay contests on educational technology in 2009, Chinese Association for Educational Technology (CAET, http://www.inf-edu.com/zhongguojyjsxh/)
- 2009.11, the 2nd prize (4/10), The first teaching competition for young teachers of FER, Faculty of Earth Resources at CUG

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Publications

Selected Journal Articles

- Xiao, F.*, Chen, Z. J.*(通讯作者), Chen J. G., Zhou, Y. Z., 2016. A batch sliding window method for local singularity mapping and its application for geochemical anomaly identification, Computers & Geosciences, 90: 189-201. http://dx.doi.org/10.1016/j.cageo.2015.11.001
- Zhang, D. J, Cheng, Q. M, Agterberg, F., Chen, Z. J., 2016. An improved solution of local window parameters setting for local singularity analysis based on Excel VBA batch processing technology, Computers & Geosciences, 88: 54-56. http://dx.doi.org/10.1016/j.cageo.2015.12.012
- Zhijun Chen, Qiuming Cheng, Summed area table for rapid local singularity mapping. In:Geostatistical and Geospatial Approaches for the Characterization of Natural Resources in the Environment: Challenges, Processes and Strategies, N. Janardhana Raju (ed), 2014, Capital Publishing Company, ISBN: 978-93-81891-25-4.pp. 16-19.
- Chen, Z. J, Cheng, Q. M., Chen, J., G., 2014. Iterative approach to loacal singularity analysis and software implementation based on raster data, Journal of Geology, 38(4): 613-622.
- Zhang, F., Wang, P., Chen, Z. J., Chen, J. G., 2014. Mixture distribution of coal seam thickness and its significance in Zhongji exploration zone of Yulin-Shenmu mining district in northern Shaanxi, Journal of Geology, 38(4): 399—407.
- Chen, Z. J, Chen, J., G., 2013. Automated batch mapping solution for serial maps：a case study of exploration geochemistry maps. Journal of Geology, 37(3): 456-464.
- Chen, Z. J, Chen, J., G., 2012. Object orientation design and implementation for cutting section of geological map system. Journal of Geology, 36(3): 256-264.
- Cheng, Q., Xia, Q., Li, W., Zhang, S., Chen, Z., Zuo, R., Wang, W., 2010. Density/area power-law models for separating multi-scale anomalies of ore and toxic elements in stream sediments in Gejiu mineral district, Yunnan Province, China. Biogeosciences, 7, 3019-3025.
- Xie, S., Cheng, Q., Xing, X, Bao, Z., Chen, Z., 2010. Geochemical multifractal distribution patterns in sediments from ordered streams, Geoderma 160(1): 36-46.
- Chen, Z. J., Cheng, Q.M., Chen, J. G.,, 2009. Comparison of different models for anomaly recognition of geochemical data by using sample ranking method. Earth Science —Journal of China University of Geosciences, 34(2):, 34(2): 353-364.
- Chen, Z. J., Cheng, Q.M., Xie, S. Y., Chen, J. G., 2007. A novel iterative approach for mapping local singularities from geochemical data. Nonlin. Processes Geophys.. 14: 317-324.
- Chen, Z. J., Cheng, Q. M., 2007. Generalized local singularity analysis and its application. Journal of China University of Geosciences. 18(Special issue): 348-350.
- Cheng, Q. M., Xia, Q. L., Li, W. C., Zhang, S. Y., Chen, Z. J., Zuo, R., Wang, W., 2010. Density/area power-law models for separating multi-scale anomalies of ore and toxic elements in stream sediments in Gejiu mineral district, Yunnan Province, China. Biogeosciences, 7, 3019-3025.
- Xie, S. Y., Cheng, Q. M., Xing, X. T., Bao, Z. Y., Chen, Z. J., 2010. Geochemical multifractal distribution patterns in sediments from ordered streams, Geoderma 160(1): 36-46.
- Zhang, S. Y., Cheng, Q. M., Chen, Z. J., 2008. Omnibus Weights of Evidence Method Implemented in GeoDAS GIS for Information Extraction and Integration, Journal of China University of Geosciences, 19(4): 404-409.
- Ali, K. Cheng, Q. M., Chen, Z. J., 2007. Multifractal power-spectrum and singularity analysis for modeling stream sediment geochemical distribution patterns to identify anomalies related to gold mineralization in Yunnan Province, south China. JEEA, 7: 293-301.
- Xie, S. Y., Cheng, Q. M., Chen, G., Chen, Z. J., Bao, Z. Y., 2007. Application of local singularity in prospecting potential oil/gas targets. Nonlin. Processes Geophys.. 14: 285-292.
- Wang, Z. J., Cheng, Q. M., Cao, L., Xia, Q. L., Chen, Z. J, 2007. Fractal modelling of the microstructure property of quartz mylonite during deformatiomnn process. Mathematical Geology, 39(1): 53-67.
- Chen, Z. J., Cheng, Q., Chen, J. G., 2007. Fitting Anisotropy Models to the Experimental Variogram Data. In: Zhao, P. D., Agtergerg, F., Cheng,Q. M.(Eds.), Proceedings of IAMG'07: Geomathematics and GIS Analysis of Resources, Environment and Hazards, held in Beijing, China, August 26-31, 2007, China University of Geosciences Printing House, Wuhan, China. 406-406. (ISTP)
- Chen, Z. J., Cheng, Q., 2006. Local singularity analysis method: anisotropic multifractal model and its application. Int. Assoc. for Mathematical Geology XIth International Congress, held in Liège, Belgium, September 3-8, 2006. (CD-ROM)
- Chen, Z. J., Cheng, Q., Chen, J. G., 2005. Significance of fractal measure in local singularity analysis of multifractal model. In: Cheng, Q. M., Bonham-Carter, G. (Eds.), Proceedings of IAMG'05: GIS and Spatial Analysis, held in Toronto, Canada, August 21-26, 2005, China University of Geosciences Printing House, Wuhan,

China. vol 1: 475-480. (ISTP)

- Xu, Y. J., Hu, G. D., Chen, Z. J., Application of Spectral Exhaustive Method for Object Identification and Mapping Using EO-1 Hyperion Data. In: Lei, J. S., Yu, J., Zhou, S. G. (eds.), Proceedings of FSKD'07. Fourth International Conference on Fuzzy Systems and Knowledge Discovery (FSKD 2007). August 24-27, 2007, Haikou, China. pp. 124-128. (EI, ISTP)
- Chen, Z. J., 2007. Multifractal theory based local singularity analyis method and its application in spatial information extraction for mineral exploration. Ph. D. thesis, China University of Geosciences (Wuhan).

THESIS

- Chen,Z. J., 2007. Multifractal Theory Based Local Singularity Analysis Method and Its Application in Spatial Information Extraction for Mineral Exploration. Ph.D. thesis, China University of Geosciences. (in Chinese with English abstract)

Research Awards

- 2010.10, The 2nd Prize of the excellent academic papers of Wuhan city.
- 2009.12, Nomination Award for the National Excellent Doctoral Dissertation of China, China Ministry of Education and the State Council Degree Committee. (363 theses win nomination awards in 2009)
- 2006.03, 2005 IAMG Student Research Grant, the International Association for Mathematical Geology.

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