Xiaolong Wei

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Education

2018– **Ph.D in Geophysics**, University of Houston, Houston, USA

2015–2018 **M.S. in Geology**, Northwest University, Xi'an, China

2011–2015 **B.S. in Geophysics**, China University of Geosciences, Beijing, China

Research Interests

- Inversion of geophysical data sets (e.g., gravity, gravity gradiometry and magnetic data)
- Structural similarity constraint joint inversion
- Uncertainty analysis in geophysical separate/joint inversions in both deterministic and stochastic frameworks
- Geology differentiation models
- Machine/deep learning algorithms applied to geophysical data interpretations

Awards & Honors

2020 Outstanding Academic Achievement, University of Houston, Houston, USA

2018 The First Prize Scholarship, Northwest University, Xi'an, China

2017 The First Prize Scholarship, Northwest University, Xi'an, China

2016 The First Prize Scholarship, Northwest University, Xi'an, China

2015 Best Bachelor Thesis, China University of Geosciences, Beijing, China

2013 The Second Prize Scholarship, China University of Geosciences, Beijing, China

Publications

Peer-Reviewed

3. **Wei, X.** and Sun, J., 2020. Uncertainty analysis of 3D potential-field deterministic inversion using mixed Lp norms. *Geophysics*. under revision

2. Sun, J., **Wei, X.**, 2020. Recovering sparse models in 3D potential-field inversion without bound dependence or staircasing problems using a mixed Lp-norm regularization. *Geophysical Prospecting*. doi:10.1111/1365-2478.13063.

1. Sun, J., Melo, A., Kim, J.D. and **Wei, X.**, 2020. Unveiling the 3D undercover structure of a Precambrian intrusive complex by integrating airborne magnetic and gravity gradient data into 3D quasi-geology model building. *Interpretation*, 8(4), pp.1-50. doi:10.1190/INT-2019-0273.1.

In preparation

1. **Wei, X.** and Sun, J., 2021. Uncertainty analysis of 3D geology differentiation models via joint inversion.

Conference Proceedings

3. **Wei, X.** and Sun, J., 2020. Uncertainty analysis of joint inversion using mixed Lp-norm regularization. In *SEG Technical Program Expanded Abstracts 2020* (pp. 925-929). Society of Exploration Geophysicists. doi:10.1190/segam2020-3428359.1.

2. **Wei, X.** and Sun, J., 2020. Quantifying uncertainties of deterministic geophysical inversions using mixed Lp norms. In *SEG Technical Program Expanded Abstracts 2020* (pp. 1404-1408). Society of Exploration Geophysicists. doi:10.1190/segam2020-3420227.1.

1. Sun, J., Melo, A., Deok Kim, J. and **Wei, X.**, 2020. Characterizing a Precambrian intrusive complex by integrating potential field data into 3D quasi-geology model building. In *SEG Technical Program Expanded Abstracts 2020* (pp. 1374-1378). Society of Exploration Geophysicists. doi:10.1190/segam2020-3428385.1.

Invited Talks

1. future

Professional Affiliations & Activities

2020– Core contributor of joint inversion code in SimPEG (https://simpeg.xyz/)

2020– American Geophysical Union (AGU)

2020– European Association of Geoscientists & Engineers (EAGE)

2018– Society of Exploration Geophysicists (SEG)

Reviewers

future–

Certifications

2018 Certificate signed by Prof. Andrew Ng upon successfully completing the online machine learning course provided by Stanford University through Coursera Inc.