Stanford

Xiaolong Wei

Postdoctoral Scholar, Geological Sciences

Bio

BIO

Xiaolong Wei is a postdoctoral research fellow in the department of Earth and Planetary Sciences at Stanford University. He is a member of the Stanford Mineral-X Initiative. Xiaolong focuses on addressing significant challenges associated with mineral exploration, and leading to a step change in the discovery of new mineral deposits. Xiaolong is currently working with Prof. Jef Caers on exploring mineral resources as well as quantifying the uncertainties of deposits using geological, geochemical and geophysical measurements.

HONORS AND AWARDS

- Dan E. Wells Outstanding Dissertation Award, University of Houston (Dec 2022)
- The Innovation Prize in Frank Arnott - Next Generation Explorers Award, Prospectors & Developers Association of Canada (Jul 2022)
- Lucien LaCoste Scholarship, Society of Exploration Geophysicists (Jun 2022)
- The Best Student Paper in the Mining Sessions, Society of Exploration Geophysicists (Jan 2022)
- Department Student Research Funding, University of Houston (Oct 2021)
- Technical Program Registration Grant, Society of Exploration Geophysicists (Sep 2021)
- John R. Butler Jr. Scholarship, Society of Exploration Geophysicists (Jun 2021)
- Outstanding Academic Achievement, University of Houston (Jan 2020)

PROFESSIONAL EDUCATION

- Ph.D., University of Houston , Geophysics (2022)
- M.S., Northwest University, Xi'an, China , Geology (2018)
- B.S., China University of Geosciences, Beijing, China , Geophysics (2015)

STANFORD ADVISORS

- Jef Caers, Postdoctoral Faculty Sponsor

LINKS

- Stanford Mineral-X: https://mineralx.sites.stanford.edu/
- Google Scholar: https://scholar.google.com/citations?user=TyBgOgIAAAAJ&hl=en
- LinkedIn: https://www.linkedin.com/in/xiaolong-wei-3a8495199/
- Personal Site: https://xiaolongw1223.github.io/

Publications

PUBLICATIONS

- **Mapping critical mineral resources using airborne geophysics, 3D joint inversion and geology differentiation: A case study of a buried niobium deposit in the Elk Creek carbonatite, Nebraska, USA** *GEOPHYSICAL PROSPECTING*

  Wei, X., Li, K., Sun, J.

  2022

- **3D probabilistic geology differentiation based on airborne geophysics, mixed L-p norm joint inversion, and physical property measurements** *GEOPHYSICS*

  Wei, X., Sun, J.

  2022; 87 (4): K19-K33

- **Quantifying uncertainty of salt body shapes recovered from gravity data using trans-dimensional Markov chain Monte Carlo sampling** *Geophysical Journal International*

  Wei, X., Sun, J., Sen, M. K.

  2022; 232 (3): 1957–1978

- **A deep learning-enhanced framework for multiphysics joint inversion** *GEOPHYSICS*

  Hu, Y., Wei, X., Wu, X., Sun, J., Chen, J., Huang, Y., Chen, J.

  2022; 88 (1)

- **Uncertainty analysis of 3D potential-field deterministic inversion using mixed Lp norms** *GEOPHYSICS*

  Wei, X., Sun, J.

  2021; 86 (6): G133-G158

- **Recovering sparse models in 3D potential-field inversion without bound dependence or staircasing problems using a mixed L-p norm regularization** *GEOPHYSICAL PROSPECTING*

  Sun, J., Wei, X.

  2021; 69 (4): 901-910

- **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-A JOURNAL OF SUBSURFACE CHARACTERIZATION*

  Sun, J., Melo, A., Kim, J., Wei, X.

  2020; 8 (4): SS15-SS29