Jidong Yang

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Education

The University of Texas at Dallas   **Richardson, USA**
Doctor of Philosophy in Geosciences   *Aug. 2016 - May 2020*

Advisor: Prof. Hejun Zhu

Dissertation: Seismic modeling, imaging and inversion in viscoacoustic media

China University of Petroleum   **Qingdao, China**
Master of Engineering in Geophysics   *Aug. 2013 - Jul. 2016*

Advisor: Prof. Jianping Huang

Thesis: Optimization for Gaussian beam migration using dynamic parameters

Xi'an Petroleum University   **Xi'an, China**
Bachelor of Engineering in Geophysics   *Aug. 2009 - Jul. 2013*

Advisor: Prof. Huifeng Li

Thesis: Seismic wave modeling using Gaussian beam summation

Professional Experiences

China University of petroleum   **Qingdao, China**
Assistant professor   *Sep. 2020 - present*
Research interests:

- Exploration seismology: Gaussian beam migration, least-squares migration, elastic reverse-time migration, attenuation related modeling, imaging and inversion

- Earthquake seismology: earthquake rupture imaging, discontinuity imaging, full-waveform inversion

- Computational seismology: large-scale parallel software development for seismic studies

TOTAL E&P USA Inc   **Houston, USA**
Research Intern   *Jan. 2018 - May 2018*

- Developed 2D/3D elastic TTI least-squares migration for land multicomponent and marine streamer data

UT Dallas   **Richardson, USA**
Research Assistant   *Sep. 2018 - Dec. 2018*

- Developed viscoacoustic 2D & 3D RTM and full-waveform inversion
- Developed isotropic and VTI LSRTM for land multicomponent data

Saudi Aramco Service Company   **Houston, USA**
Research Intern   *Jun. 2018 - Aug. 2018*

- Developed an efficient wavefield separation algorithm for elastic VTI and TTI media

UT Dallas   **Richardson, USA**

Research Assistant   *Aug. 2016 - May 2018*

- Developed vector wavefield separation algorithm for isotropic elastic RTM
- Derived a new viscoacoustic wave equation and applied it to seismic modeling
- Developed a fast time-domain least-squares Gaussian beam migration
- Developed a least-squares reverse-time migration using impedance kernel

Academic and Social Experience

- *2017 - Present*, **Peer reviewer** for *Geophysical Journal International*, *Geophysics*, *Computer & Geosciences*, *Geophysical Prospecting*, *Journal of Applied Geophysics*, *Exploration Geophysics*, *Surveys in Geophysics*, *IEEE TGRS*, *Pure and Applied Geophysics*, *Journal of Computational Physics*, *Journal of the Acoustical Society of America*, *Journal of Petroleum science and engineering*
- *2018 - Present*, **Section reviewer** for SEG annual meeting abstracts
- *2017 - 2018*, **Vice President**, UT-Dallas SEG Student Chapter

Awards

- April 2021, **The Best Dissertation Award**, UT Dallas
- Jul. 2019, **SEG/Anadarko scholarship**, Society of Exploration Geophysicists
- Aug. 2018, **SEG/Anadarko scholarship**, Society of Exploration Geophysicists

Selected Journal Publications

1. **Jidong Yang**, Hejun Zhu, Thorne Lay, Yufen Niu, Lingling Ye, Zhong Lu, Binxu Luo, Hiroo Kanamori, Jianping Huang, Zhenchun Li. Multi-fault opposing-dip strike-slip and normal-fault rupture during the 2020 Mw 6.5 Stanley, Idaho earthquake. *Geophysical Research Letters*, 1(1):e2021GL092510, 2021.

2. **Jidong Yang**, Jianping Huang, Zhenchun Li, Hejun Zhu, George McMechan and Xin Luo. Approximating the Gauss-Newton Hessian Using a Space-Wavenumber Filter and its Applications in Least-Squares Seismic Imaging. *IEEE Transactions on Geoscience and Remote Sensing*, 1(1):1-13, 2021.

3. **Jidong Yang**, Hejun Zhu adnd David Lumley. Time-lapse imaging of coseismic ruptures for the 2019 Ridgecrest earthquakes using multi-azimuth back-projection with regional seismic data and a 3D crustal velocity model. *Geophysical Research Letters*, 47(9):e2020GL087181, 2020.

4. **Jidong Yang**, Hejun Zhu, Xueyan Li, Li Ren, Shuo Zhang. Estimating P-wave velocity and attenuation structures using full waveform inversion based on a time-domain complex-valued viscoacoustic wave equation: The method. *Journal of Geophysical Research: Solid Earth*, 125(6):e2019JB019129, 2020.

5. **Jidong Yang**, Biaolong Hua, Paul Williamson, Hejun Zhu, George McMechan and Jinaping Huang. Elastic least-squares imaging in tilted transversely isotropic media for multicomponent land and pressure marine data. *Surveys in Geophysics*, 41():805–833, 2020.

6. Hejun Zhu, Robert Stern, **Jidong Yang**. Seismic evidence for subduction-induced mantle flows underneath Middle America. *Nature Communications*, 11(1):2075, 2020.

7. Hejun Zhu, **Jidong Yang**, Xueyan Li. Azimuthal Anisotropy of the North American Upper Mantle Based on Full Waveform Inversion. *Journal of Geophysical Research: Solid Earth*, 125(2):e2019JB018432, 2020.

8. Hejun Zhu, Xueyan Li, **Jidong Yang**, Robert Stern, David Lumley. Poloidal- and Toroidal-Mode Mantle Flows Underneath the Cascadia Subduction Zone. *Geophysical Research Letters*, 47(14):e2020GL087530, 2020.

9. **Jidong Yang**, and Hejun Zhu. Viscoacoustic least-squares reverse-time migration using a time-domain complex-valued wave equation. *Geophysics*, 84(5):1-130, 2019.

10. **Jidong Yang**, Houzhu Zhang, Yang Zhao, and Hejun Zhu. Elastic wavefield separation in anisotropicmedia based on eigenform analysis and its application in reverse-time migration. *Geophysical Journal International*, 217(2):1290-1313, 2019.

11. **Jidong Yang**, Hejun Zhu, Wenlong Wang, Yang Zhao, and Houzhu Zhang. Isotropic elastic reverse-time migration using the phase- and amplitude-corrected vector P-and S-wavefields. *Geophysics*, 83(6):S489-S503, 2018.

12. **Jidong Yang**, Hejun Zhu, George McMechan, and Yubo Yue. Time-domain least-squares migration using the Gaussian beam summation method. *Geophysical Journal International*, 214(1):548-572, 2018.

13. **Jidong Yang** and Hejun Zhu. A time-domain complex-valued wave equation for modelling visco-acoustic wave propagation. *Geophysical Journal International*, 215(2):1064-1079, 2018.

14. **Jidong Yang** and Hejun Zhu. Locating and monitoring microseismicity, hydraulic fracture andearthquake rupture using elastic time-reversal imaging. *Geophysical Journal International*, 216(1):726-744, 2018.

15. **Jidong Yang**, Hejun Zhu, Jianping Huang, and Zhenchun Li. 2D isotropic elastic Gaussian-beam migration for common-shot multicomponent records. *Geophysics*, 83(2):S127-S140, 2018.

16. **Jidong Yang** and Hejun Zhu. Viscoacoustic reverse time migration using a time-domain complex-valued wave equation. *Geophysics*, 83(6):S505-S519, 2018.

17. **Jidong Yang** and Hejun Zhu. A practical data-driven optimization strategy for Gaussian beam migration. *Geophysics*, 83(1):S81-S92, 2018.

18. **Jidong Yang**, Jianping Huang, Xin Wang and Zhenchun Li. An amplitude-preserved adaptive focused beam seismic migration method. *Petroleum Science*, 12(3):417-427, 2015.

Conference & Workshop Abstracts

1. **Jidong Yang** Jianping Huang, Zhenchun Li, Hejun Zhu and George McMechan. Angle-domain least-squares Gaussian beam migration. *SEG Annual Meeting*, 2021

2. **Jidong Yang** Jianping Huang, Zhenchun Li, Hejun Zhu and Nanxun Dai. A stable space-wavenumber attenuation compensation method for viscoacoustic reverse-time migration. *SEG Annual Meeting*, 2021

3. **Jidong Yang**, Biaolong Hua, Paul Williamson Hejun Zhu and George McMechan. Estimating subsurface P- and S-wave reflectivities using elastic TTI least-squares reverse-time migration. 82th *EAGE Annual Meeting*, 2021

4. **Jidong Yang**, Hejun Zhu and David Lumley. Coseismic Rupture Process of 2019 Ridgecrest Earthquake Sequence Computed Using Regional Back-projection with a 3D Crustal Velocity Model. *AGU Annual Meeting*, 2020

5. **Jidong Yang** and Hejun Zhu. Isotropic elastic reverse-time migration using impedance sensitivity kernel. *SEG Annual Meeting*, 2019

6. **Jidong Yang** and Hejun Zhu. Locating and monitoring hydraulic fracture and earthquake rupture using elastic reverse-time migration. *AGU Annual Meeting*, 2018

7. **Jidong Yang** and Hejun Zhu. Low-frequency compensation and its application in full-waveform inversion. *SEG Annual Meeting*, 2018

8. **Jidong Yang** and Hejun Zhu. Least-squares reverse time migration using the impedance-sensitivity kernel. *SEG Annual Meeting*, 2018

9. **Jidong Yang** and Hejun Zhu. A new time-domain wave equation for viscoacoustic modeling and imaging. *SEG Annual Meeting*, 2018

10. **Jidong Yang** and Hejun Zhu. Time-domain least-squares Gaussian beam migration with L1 regularization. *SEG Annual Meeting*, 2018

11. **Jidong Yang**, Hejun Zhu and Shuo Zhang. Isotropic elastic wavefields decomposition using fast Poisson solvers. *SEG Annual Meeting*, 2017

12. **Jidong Yang** and Hejun Zhu. Least-squares Gaussian beam migration in time-space domain. *SEG Annual Meeting*, 2017

13. **Jidong Yang**, Hejun Zhu, Jianping Huang and Zhenchun Li. Elastic Fresnel beam migration for areas with irregular topography. *SEG Annual Meeting*, 2016

14. **Jidong Yang**, Hejun Zhu, Jianping Huang and Zhenchun Li. Study of data-driven optimization strategy for beam migration. *SEG Annual Meeting*, 2016

15. **Jidong Yang**, Jianping Huang, Xin Wang and Zhenchun Li. Fresnel beam depth migration from the irregular topography. *SEG Annual Meeting*, 2015

16. **Jidong Yang**, Jianping Huang, Xin Wang and Zhenchun Li. Common-Shot Elastic Gaussian Beam Depth Migration. *SEG Annual Meeting*, 2015

17. **Jidong Yang**, Jianping Huang, Xin Wang and Zhenchun Li. High SNR Gaussian beam migration based on matching pursuit sparse decomposition. *SEG Annual Meeting*, 2015

18. **Jidong Yang**, Jianping Huang, Xin Wang and Zhenchun Li. Prestack depth migration method using the time-space Gaussian beam. *SEG Annual Meeting*, 2015

19. **Jidong Yang**, Jianping Huang, Xin Wang and Zhenchun Li. Data-driven Gaussian beam migration based on local similarity analysis. 77th *EAGE Annual Meeting*, 2015

20. **Jidong Yang**, Jianping Huang, Xin Wang and Zhenchun Li. Amplitude-preserved Gaussian beam migration based on wave field approximation in effective vicinity under rugged topography condition. *SEG Annual Meeting*, 2014