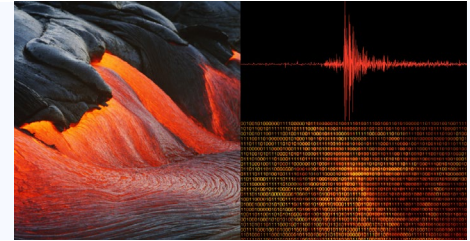


Artificial Intelligence and Machine Learning in Geophysics: Are We Beyond the Black Box?



THURSDAY, NOVEMBER 16, 2023

All times PM Eastern Standard Time (GMT-5)

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| 1:00–1:05 | <p>Welcome and Introduction</p> <p><i>Thorsten Becker, University of Texas at Austin, COSEG chair</i></p> <p>Session 1</p> <p><i>Moderated by Rengin Gok, Lawrence Livermore National Laboratory, COSEG member</i></p> |
| 1:05–1:30 | <p>Machine learning for data-driven discovery in solid Earth geoscience: Progress and opportunities</p> <p><i>Karianne Bergen, Brown University</i></p> |
| 1:30–1:55 | <p>Opportunities and limitations of deep learning for earthquake monitoring</p> <p><i>Jannes Münchmeyer, Université Grenoble Alpes</i></p> |
| 1:55–2:20 | <p>Physics-informed deep learning for geophysical inverse problems</p> <p><i>Ching-Yao Lai, Stanford University</i></p> |
| 2:20–2:45 | <p>Causal inference in Earth Sciences</p> <p><i>Jakob Runge, German Aerospace Center, Technische Universität Berlin</i></p> |
| 2:45–3:00 | <p>Break</p> <p>Session 2</p> <p><i>Moderated by Mong-Han Huang, University of Maryland, COSEG member</i></p> |
| 3:00–3:25 | <p>The paradigm of operator learning and its relevance to geophysics</p> <p><i>Zach Ross, Caltech</i></p> |
| 3:25–3:50 | <p>Toward a new generation of climate models augmented by AI</p> <p><i>Laure Zanna, New York University</i></p> |
| 3:50–4:15 | <p>Physics-guided and interpretable data-driven simulations</p> <p><i>Youngsoo Choi, Lawrence Livermore National Laboratory</i></p> |
| 4:15–4:40 | <p>Neural Operators for Learning on Function Spaces and Solutions to PDEs</p> <p><i>Anima Anandkumar, Caltech</i></p> |
| 4:40–4:45 | <p>Summary and Wrap-up</p> <p><i>Thorsten Becker, University of Texas at Austin, COSEG chair</i></p> |