

MIT EARTH RESOURCES LABORATORY
ANNUAL FOUNDING MEMBERS MEETING 2022



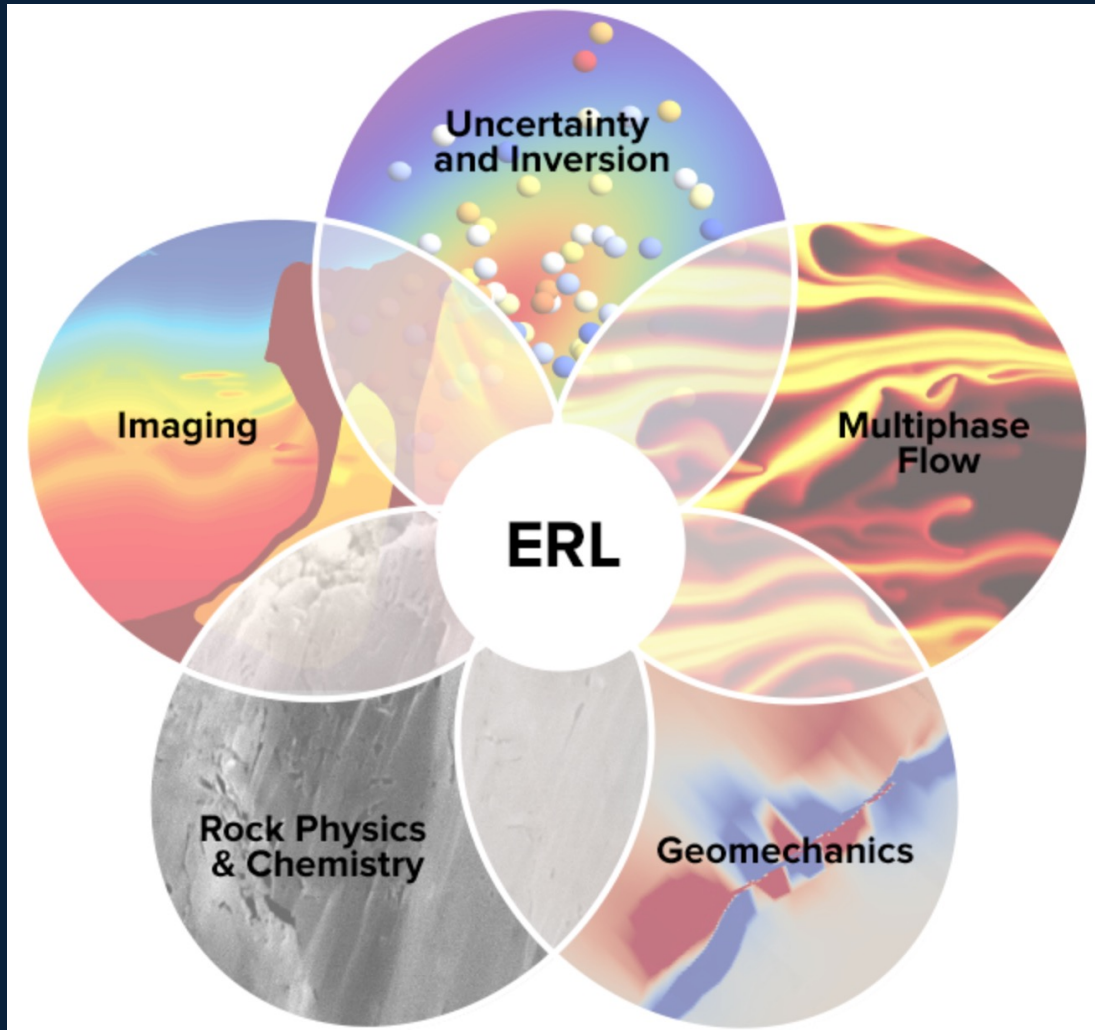
Overview of the Earth Resources Laboratory



Laurent Demanet

DIRECTOR OF ERL, PROFESSOR, DEPARTMENTS OF MATHEMATICS AND EAPS

The Earth Resources Lab (ERL)



1980s: Sonic logging,
borehole physics

15 faculty, 8 RS, 34 students,
18 postdocs

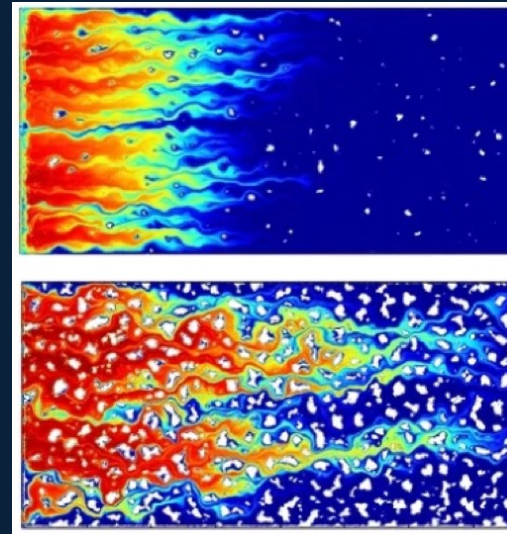
2018: the machine learning
(r)evolution

2021: the sustainability
(r)evolution

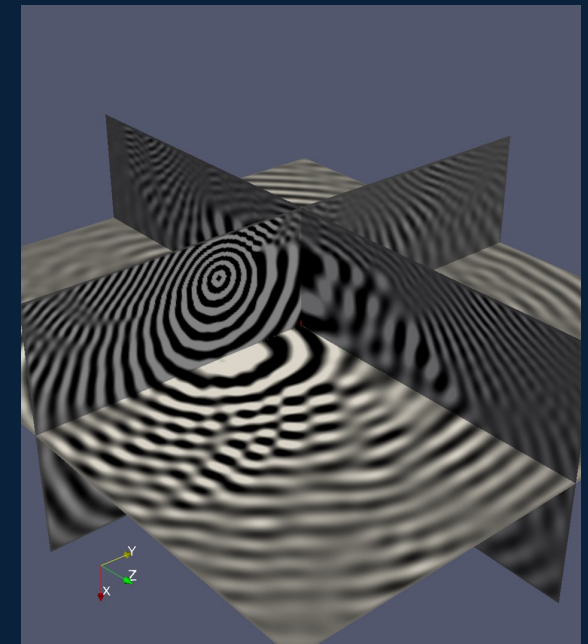
Focus areas

- **Toward net-zero**

- Geothermal
- Geological carbon storage (CCS)
- Geological energy storage
- Plug and abandonment



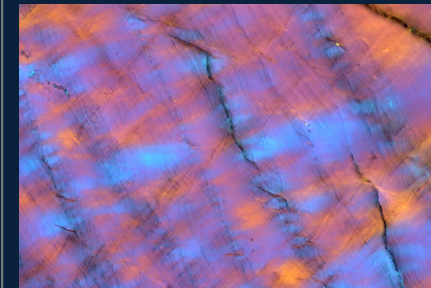
Flows in porous/
fractured media



Seismic imaging/
inversion

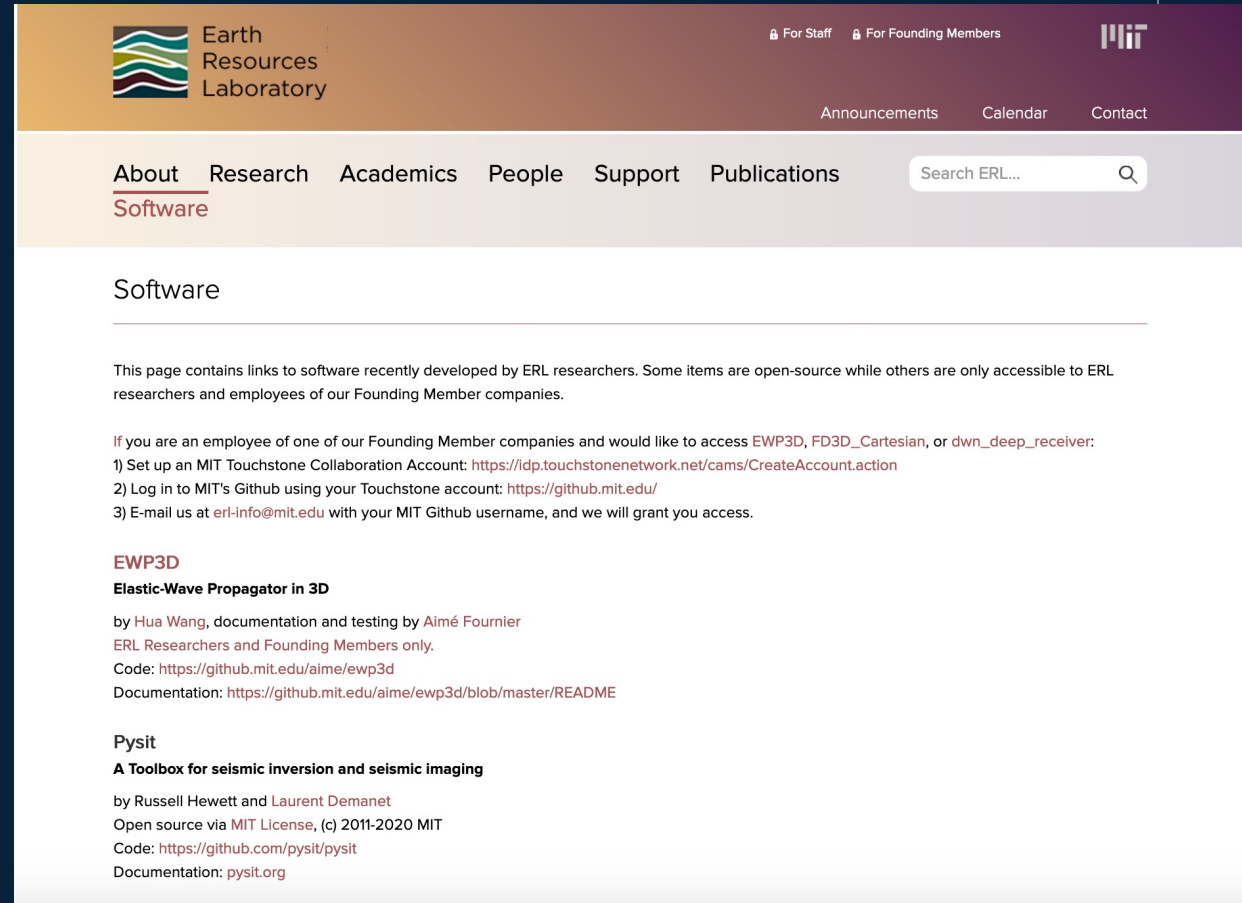
ERL in the news

- **Niels Grobbe awarded SEG's 2021 Karcher award**
- **Eden GeoPower (Paris Smalls) awarded DOE ARPA-E grant**
- **ERL work featured in MIT News**
- **Announcements on**



New in ERL

- **Software page**
 - Thanks to Aimé Fournier



The screenshot shows the ERL website's 'Software' page. The header includes the ERL logo, navigation links for 'About', 'Research', 'Academics', 'People', 'Support', and 'Publications', and a search bar. The main content area features a heading 'Software' followed by a paragraph explaining that the page contains links to software developed by ERL researchers, some of which are open-source while others are restricted to ERL researchers and employees of founding member companies. Below this, there are instructions for access: 1) Set up a MIT Touchstone Collaboration Account, 2) Log in to MIT's Github using your Touchstone account, and 3) E-mail us at erl-info@mit.edu with your MIT Github username. Two software projects are highlighted: 'EWP3D' (Elastic-Wave Propagator in 3D) by Hua Wang, with documentation and testing by Aimé Fournier, and 'Pysit' (A Toolbox for seismic inversion and seismic imaging) by Russell Hewett and Laurent Demanet.

Earth Resources Laboratory

For Staff For Founding Members

MIT

Announcements Calendar Contact

About Research Academics People Support Publications

Search ERL...

Software

This page contains links to software recently developed by ERL researchers. Some items are open-source while others are only accessible to ERL researchers and employees of our Founding Member companies.

If you are an employee of one of our Founding Member companies and would like to access *EWP3D*, *FD3D_Cartesian*, or *dwn_deep_receiver*:

- 1) Set up an MIT Touchstone Collaboration Account: <https://ldp.touchstonenetwork.net/cams/CreateAccount.action>
- 2) Log in to MIT's Github using your Touchstone account: <https://github.mit.edu/>
- 3) E-mail us at erl-info@mit.edu with your MIT Github username, and we will grant you access.

EWP3D
Elastic-Wave Propagator in 3D

by Hua Wang, documentation and testing by Aimé Fournier
ERL Researchers and Founding Members only.
Code: <https://github.mit.edu/aime/ewp3d>
Documentation: <https://github.mit.edu/aime/ewp3d/blob/master/README>

Pysit
A Toolbox for seismic inversion and seismic imaging

by Russell Hewett and Laurent Demanet
Open source via MIT License, (c) 2011-2020 MIT
Code: <https://github.com/pysit/pysit>
Documentation: pysit.org

2022 Agenda Overview

- **Today (all times Eastern)**

- 9:10 – FWI, Imaging, and Machine Learning
- 10:40 – CO2 Storage and Hazards
- 12:00 – Student and Postdoc Introductions
- 1:40 – Plenary: Yunyue Elita Li -- Carbon sequestration in the subsurface: the atlas and the monitoring
- 2:10 – Acquisition and Processing for Passive Seismicity
- 5:45 – Cruise

- **Tomorrow**

- 9:00 – Plenary: Dirk Smit -- Perspectives on CCS beyond Scope 1 and 2
- 9:30 – ERL Principal Investigators: Overviews and Perspectives
- 12:00 – Business meeting and lunch (room 54-209 + zoom)

Format

SEARCH MIT ERL FOR LINK TO SCHEDULE

- **Zoom**
 - Please mute yourself
 - Please mute AND turn off sound if in person
 - Type in chat for any issue, or to say hi!
- **Zoom alt?**
 - Ask us for breakouts or alternative rooms
- **Recordings available after the meeting**

