AGU Distributed Sensing Technical Committee

Welcome & Update from the Chairs

Welcome to the second edition of the Distributed Sensing Technical Committee (DS TC) Newsletter!

Our community brings together members from various backgrounds and disciplines working on different aspects related to sensing across all domains supported by AGU.

We are happy to share with you some exciting recent developments.

Last month we held a meeting with AGU leadership to discuss the mission of the Technical Committee and the needs of our community to develop the best framework within the AGU structure to fit our cross-sectional representation, activities and collaborations. The leadership was intrigued by the interdisciplinary nature of our group and there are ongoing discussions on the topic. We will keep you posted!

In addition, preparations for AGU25 are underway. We would like to thank all the members who have submitted sessions and workshops proposals, and the AGU Session Development Subcommittee for leading and coordinating the efforts. We are looking forward to receiving your abstracts, showcasing your exciting works and findings!

Let's measure together!

Stephen Moysey (Chair) & Emily Elhacham (Co-Chair)
AGU Distributed Sensing Technical Committee (DS TC)

Save the date!
AGU Distributed Sensing Technical Committee Call

Date: 21 August 2025
Time: 3:00-4:00 PM U.S. Eastern Time (7:00PM GMT)
Meeting link will be sent to the DS TC mailing list.

AGU25 Call for Abstracts!

There are many exciting interdisciplinary distributed sensing sessions planned for AGU25. Below are highlights of MacGyver sessions and other DS TC related sessions. Also, share these opportunities with colleagues who might be interested!

Don't delay: Submit your abstracts by Wednesday, 30 July 23:59 EDT/03:59 UTC.

MacGyver Your Science at AGU '25!

Are you hacking together rugged field gear? Building open-source sensor systems? Teaching students with Arduinos, Raspberry Pis, or soda bottles and duct tape? Show off your design and even your prototype at the 2025 AGU MacGyver Sessions. Help transform how Geoscience gets done! This year's MacGyver sessions spotlight grassroots ingenuity in:

→ **H137 - The MacGyver Session: Novel, Exciting, Self-Made, Hacked, and/or Improvised Sensors, Data Acquisition, and Data Transmission Solutions to Understand the Geosphere**
Conveners: Chet Udell (udellc@oregonstate.edu), Austin Madson, Rolf Hut, Andrew Wickert

→ **NS016 - The MacGyver Session: The Place for Novel, Exciting, Self-Made, Hacked, or Improved Sensors and Software Solutions to Understand the Near Surface Environment**
Conveners: Rhett Herman (rherman@radford.edu), Burke Minsley, Brian Moyer, Ryan Stewart

→ **SA021 - The MacGyver Session: The Place for Novel, Exciting, Self-Made, Hacked, or Improved Sensors and Software Solutions to Understand Space Weather**
Conveners: Vincent Ledvina (vledvina@alaska.edu), Nathaniel Frissell, Francesca Di Mare

→ **OS027 - The MacGyver Session: The Place for Novel, Exciting, Self-Made, Hacked, or Improved Sensors and Software Solutions to Understand Ocean Environments**
Conveners: Stephen Moysey (moyseys18@ecu.edu), Ryan McCune, Lindsay Wentzel, Katherine Anarde

→ **SY046 - The MacGyver Session: The Place for Novel, Exciting, Self-Made, Hacked, or Improved Sensors and Software Solutions to Contribute to Participatory, Citizen, and Community Science**
Conveners: Phil Bresnahan (bresnahanp@uncw.edu), Stephen Moysey, Austin Madson

General DS TC Sessions

→ **B086 - Surface-Atmosphere Interactions: Scaling Fluxes with Remote Sensing**
Conveners: Nicola Falco (icolafalco@lbl.gov), David Durden, Leila Hernandez Rodriguez, Stefan Metzger

→ **NS004 - Advances in Fiber-Optic Sensing for Near-Surface Imaging and Geohazard Assessment**
Conveners: Cheng Feng (fengcheng@zju.edu.cn), Ajo-Franklin Jonathan, Ettore Biondi, Eileen Rose Martin, Ahmad Tourei

→ **H163 - Wireless Data Networking for Distributed Sensing in the Earth Sciences: Connecting the Sciences**
Conveners: Cian Dawson (cian@cbdawson.com), Peng Fu, Vinit Sehgal, Stijn Wielandt

→ **H145 - Understanding Distributed Sensing Instruments for Scientific Discovery: A Guided Tour through the Tools of Earth Science**
Conveners: Haokai Zhao (hkzhao7@mit.edu), Vidya Samadi, Cian Dawson

Resources for submitting to AGU

New for AGU25! Submit an Abstract for a Science Exchange Session

AGU25 offers an alternative pathway to the call for abstracts, designed for contributions from individuals regardless of whether they have research to present. You may submit proposals for individual or panel presentations that highlight experiences, ideas, or the latest challenges and technologies with the greater AGU community. Learn more about Science Exchange.

Hardship Fees Waiver

If you have recently lost a job or significant funding, apply for a waiver of your 2025 AGU membership dues and Annual Meeting abstract submission fees

Session Finder

New for AGU25! Easily browse the sessions that will best fit your abstract. Paste a copy of your abstract into the Session Finder and browse the results.

First Time Abstract Submitters Guide

Discover the new Knowledge Center full of step-by-step guides and best practices for researchers submitting work for the first time to the AGU25 Annual Meeting.

Featured Field Photo: Elnaz Pezeshki, Ph.D. candidate at East Carolina University, sets up a distributed Electrical Resistivity Tomography (ERT) array with 72 electrodes across a drainage ditch to monitor subsurface saltwater movement in the root zone of coastal agricultural soil. Credit: Elnaz Pezeshki, East Carolina University.

Get involved!

Everyone in the distributed sensing research community and across all AGU sections is invited to get involved in the Technical Committee!

Join the Email Group

Join the Technical Committee email group to get updates, participate in planning discussions, share resources, and receive meeting announcements. All members can post. The list is currently very low-volume. To join, send an email to DS TC Secretary, Aleksei Nelaev (nelaevaleksei@gmail.com).

Be a Section Liaison!

Are you on the executive committee of another AGU Technical Committee or Section? Can you help with communication between our groups, to share opportunities and coordinate collaborations?

Submit to Future Newsletters!

Help us build this newsletter into a community resource!

- Know of events or opportunities of interest to the community?
- Want to share photos?
- Have other announcements to share?

Submit suggestions through the DS TC suggestion form anytime!

Join a Subcommittee!

Learn more about DS TC subcommittees and volunteer!

Community Calendar

Upcoming events and deadlines that may be of interest to the Distributed Sensing research community:

AWRA 2025 Annual Water Resources Conference (Deadline)
Abstract Deadline: 25 July 2025

AGU25 (Deadline)
Abstract Deadline: 30 July 2025

OCEANS 2025 Great Lakes (Deadline)
Paper Deadline: 31 July 2025

SEG 2025 Summit on Drone Geophysics (Deadline)
Abstract Deadline: 10 August 2025

CTEMPs Hands-on Workshop in Fiber-Optic Distributed Acoustic and Temperature Sensing for Environmental Monitoring
Dates: 11-15 August 2025

For the full calendar:

- View the calendar online
- Subscribe to the calendar
- Submit events and deadlines for the calendar

Connect on Bluesky

We're now on Bluesky! We are now one of more than 20 AGU section, committee, and publication accounts on Bluesky. Connect with us there, and help spread the word to colleagues. Please let us know what you would like to see from us on that platform, and if there are resources or events we can help boost.

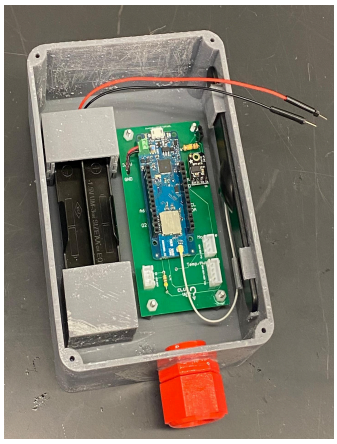
Distributed Sensing Researcher Profile: Haokai Zhao

Dr. Haokai Zhao is a postdoctoral researcher at MIT, whose research focuses on Earth and environmental systems sensing and modeling and urban sustainability. He earned his Ph.D. and M.S. degrees in Civil and Environmental Engineering from Columbia University and holds a B.Eng. degree in Electrical Engineering from Tongji University.

Haokai Zhao installing a sensing unit in the field.

During his PhD studies, Dr. Zhao led several interdisciplinary projects for addressing urban sustainability challenges, including developing a novel land surface temperature modeling approach for mitigating extreme urban heat, and creating a wireless environmental sensing network for urban green space monitoring and stormwater management.

At MIT, he has been working on synthesizing Bayesian data assimilation and deep learning techniques to develop a sensor-to-ML framework for real-time soil moisture monitoring and forecasting. He also develops algorithms for anomaly detection and spatial interpolation for ground water contamination assessment, aiming for the establishment of effective long-term environmental sensing networks to advance climate resilience and sustainable development.



LoRaWAN-based environmental sensing system developed by Dr. Zhao.

Dr. Zhao's work has been published in leading journals such as Sustainable Cities and Society and Scientific Reports. His work has been honored with several awards, including the Best Short Paper Award at IEEE IE 2022 and the Floyd Hasselriis Educational Support Award from ASME. Beyond his research, he enjoys soccer, photography and road trips.

Want to suggest a profile? Reach out to the Student and Early Career Subcommittee via Evan King (e_king@mit.edu).