



EARTHSCOPE INSAR TRAINING:

INSAR PROCESSING AND TIME-SERIES ANALYSIS FOR GEOPHYSICAL APPLICATIONS: INSAR SCIENTIFIC COMPUTING ENVIRONMENT (ISCE), ARIA TOOLS, AND MINTPY

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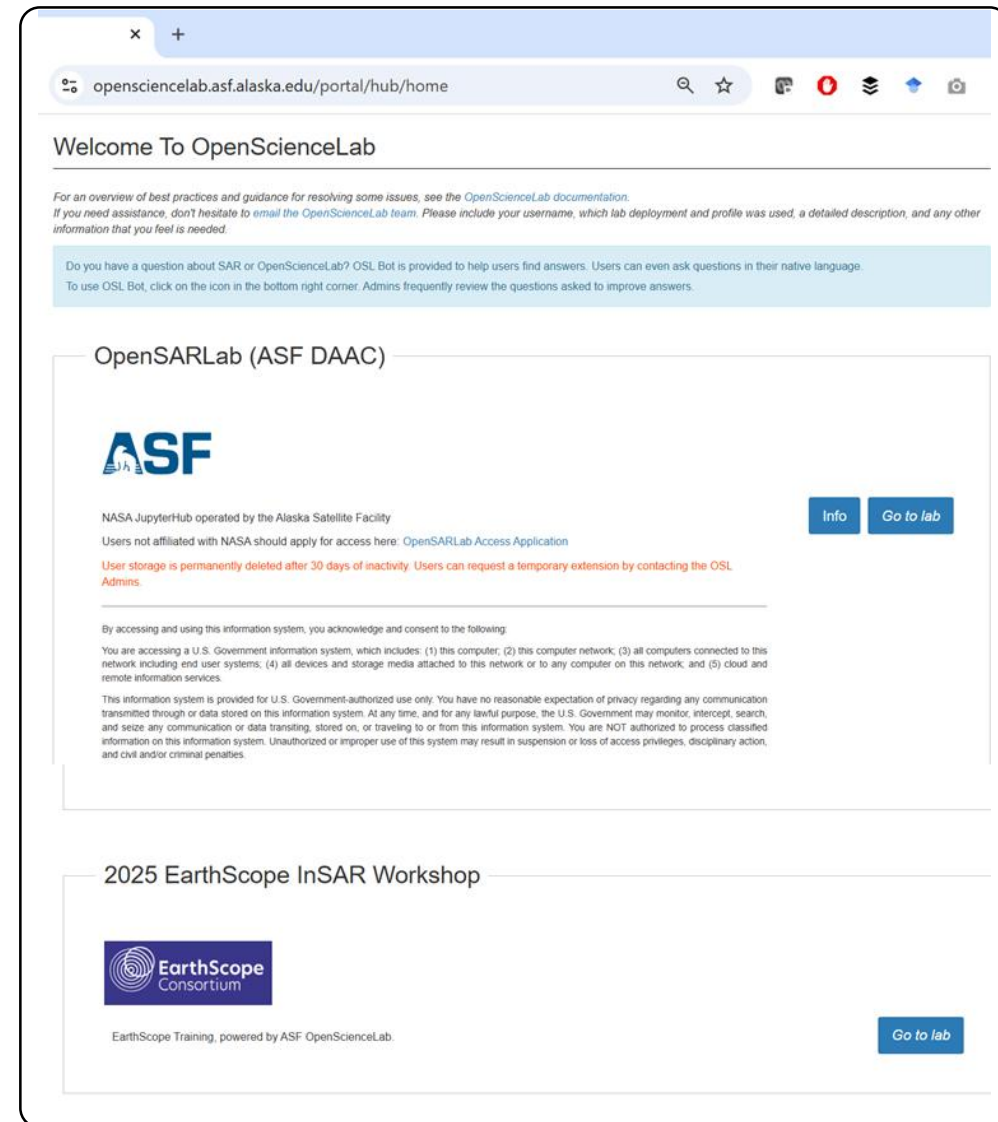
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Short Introduction to OpenScienceLab

The UNAVCO InSAR Course OpenScienceLab Environment

URL: <https://opensciencelab.asf.alaska.edu/>

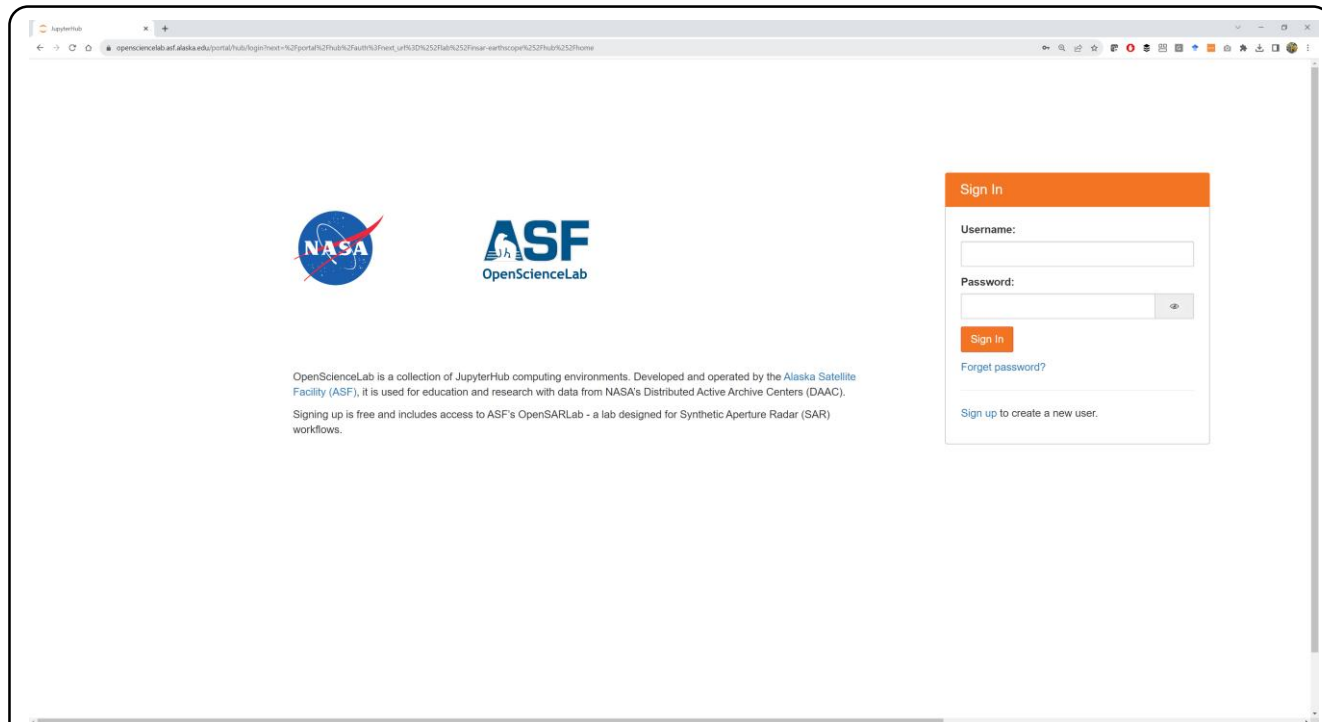
- OpenScienceLab is a pre-installed and fully cloud-based processing environment
- It can be used from any internet-enabled device with a web browser
- Sits next to ASF archive in the Amazon Web Services (AWS) cloud → does not require data download to a local machine
- You should see the **2025 EarthScope InSAR Workshop** deployment. It contains all notebooks and software needed for this course
- **Please post on slack if you can't see this deployment and tag @Eric Lundell @Dylan Palmieri**



The UNAVCO InSAR Course OpenScienceLab Environment

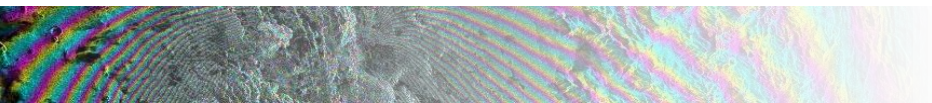
URL: <https://opensciencelab.asf.alaska.edu/>

- Select the **2025 EarthScope InSAR Workshop** deployment
- Log in following the instructions.



The screenshot shows the OpenScienceLab login page. It features the NASA and ASF (Alaska Satellite Facility) logos. Below the logos, there is a paragraph of text: "OpenScienceLab is a collection of JupyterHub computing environments. Developed and operated by the Alaska Satellite Facility (ASF), it is used for education and research with data from NASA's Distributed Active Archive Centers (DAAC). Signing up is free and includes access to ASF's OpenSARLab - a lab designed for Synthetic Aperture Radar (SAR) workflows." On the right side, there is a "Sign In" form with fields for "Username:" and "Password:", a "Sign In" button, a "Forgot password?" link, and a "Sign up to create a new user." link.

- Click on “Sign In”
- Click on “Sign up” and create an account using the email address used when registering for the UNAVCO class



Working Within the EarthScope OpenScienceLab

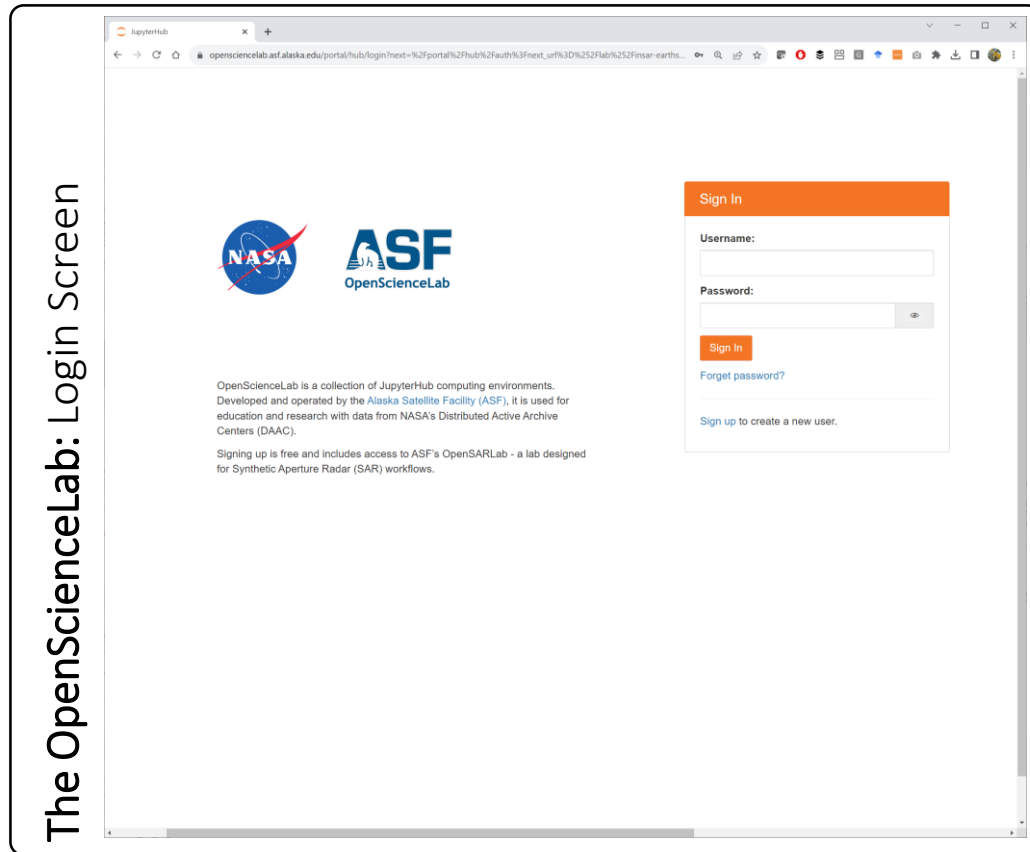
Account Creation & Login

1. If you don't yet have access do this!

2. Click on "Sign in"

3. **First time user:** Click on "Sign up"

4. **Fill in the signup form** and submit [please use the email address associated with your EarthScope InSAR course registration]



Select the EarthScope InSAR Server Once You are Logged In

Select a Server Option

JupyterHub

opensciencelab.asf...

jupyterhub Home Token Services

Go to Portal Home fmeyer Logout

Server Options

- ☒ **m6a.large**
JupyterLab 4 - RAM Guarantee: 5G. RAM limit: 8G. CPU limit: 2.
Storage: 500G.
- ☐ **m6a.xlarge**
JupyterLab 4 - RAM Guarantee: 10G. RAM limit: 16G. CPU limit: 4.
Storage: 500G.

Start

Working Within the EarthScope OpenSARLab

Features within the Notebook Lab

Need Help?

- Home screen features:

The screenshot shows the EarthScope OpenSARLab Notebook Lab interface. On the left is a file browser showing a directory structure with folders like '2025-isceplus', 'conda_environments', 'lost+found', and 'TEMP'. The '2025-isceplus' folder is highlighted. On the right is the 'Launcher' panel with three sections: 'Notebook' (containing three Python notebook icons), 'Console' (containing three Python console icons), and 'Other' (containing icons for Terminal, Text File, Markdown File, Python File, and Show Contextual Help). The 'Terminal' icon is highlighted. A red arrow points from the 'Need Help?' button to the 'Shutdown and Logout Page' link in the top right. Several callout boxes provide instructions: 'Logout and Server Shutdown' points to the top right; 'Upload files from your local computer' points to the upload icon in the file browser; 'Create new notebooks' points to the notebook icons; 'Open a Terminal for Command-Line work' points to the terminal icon; 'All your notebooks are in the 2025-isceplus folder' points to the '2025-isceplus' folder; and 'Check on your Running Processes – Shut down Notebooks you don't' points to the 'Running' tab in the file browser.

Logout and Server Shutdown

Upload files from your local computer

Create new notebooks

Open a Terminal for Command-Line work

All your notebooks are in the 2025-isceplus folder

Check on your Running Processes – Shut down Notebooks you don't

Working Within the OpenScienceLab

Navigate to the Notebooks Relevant for this Training

- To find the **Jupyter notebooks related to this EarthScope InSAR training**, navigate to:

2025-isceplus

All training materials for this course are public and available at

<https://github.com/isceplus>

OpenScienceLab: Notebooks for Training

The screenshot displays the JupyterLab (auto-v) web interface. The browser address bar shows 'opensciencela...'. The left sidebar contains a file browser for the '/ 2025-isceplus /' directory, listing files such as '0.1_Math_Basics', '0.2_Python_NumPy_Matplotlib', '0.3_SAR_Theory_Phenomenology', '0.4_Accessing_and_Working_Wi...', '0.5_Data_Search_and_Access', '1.2_Geophysical_Modeling_with...', '2.1_TOPS_Data_Processing', 'LICENSE', and 'README.md'. The main area shows a 'Launcher' panel with a '2025-isceplus' section containing three notebook icons: 'base [conda env:base] *', 'earthscope_insar [conda env:earthscope_i nsar]', and 'Python [conda env:earthscope_i nsar]'. Below this is a 'Console' section with three console icons. At the bottom, there is an 'Other' section with icons for 'Terminal', 'Text File', and 'Markdown File'. The status bar at the bottom indicates 'Simple' mode, '0' errors, 'main' branch, and 'Mem: 181.06 MB'.

Benefits of the Notebook-based OpenScienceLab

Jupyter Notebooks

- Jupyter Notebook benefits:

- Mix code with instructions and explanations
- Mix synthetic data for demonstration with real data for use in science and applications
- Easily expand existing code
- Vanilla entry to python programming
- Fully reproducible processing performance and processing results
- Heavy processing in the cloud → only download what you need

Have your own notebooks or notebooks from other authors? The lab is installed with a broad set of python tools → most notebooks should run out of the box

