Up Up and Away..but Not too Far!

Project Scientist Dr. Tom Neumann has accepted a new position as the Earth Sciences Deputy Division Director at NASA Goddard. Tom has been with ICESat-2 for 14 years through the development and first four years of operations. A search for a new Project Scientist will be underway shortly. Please join us in congratulating Tom! We will miss you as part of our Applications Team!
ICESat-2’s suite of along track products is moving toward Version 6! These versions contain improvements across all data products and will be available late this calendar year from the National Snow and Ice Data Center (nsidc.org).

The ICESat-2 team conducted a successful airborne campaign to acquire coincident aircraft and ICESat-2 data over melting Arctic sea ice in July. The team dodged cloudy weather to manage six flights operating out of Thule, Greenland. Details are on twitter @NASA_ice and here: https://www.nasa.gov/feature/goddard/2022/nasa-ice-scientists-take-flight-from-greenland-to-study-melting-arctic-ice

More great news and additional information below!

Best,
The ICESat-2 Applications Team
NASA ROSES-22 Funding Opportunity

Have applied research using ICESat-2 (e.g., sea ice extent effects on shipping activity, Arctic wildfire impacts on food security)? NASA is soliciting proposals for Earth Science research using observations from ICESat-2 (Studies with ICESat-2, program element A.32). Overall priority will be given to investigations focused on land and sea ice in the Earth's polar regions. Other areas of Earth science research will be considered at a lower priority, but NASA anticipates supporting several such investigations.

Two categories of proposals are solicited. ICESat-2 data need to be central for either category:

- (a) Investigations that are using ICESat-2 data to address major needs, gaps or uncertainties in knowledge in Earth Science and especially cryospheric science as identified, for example, by the latest IPCC report https://www.ipcc.ch/report/ar6/wg1/, the Special Report on the Ocean and Cryosphere in a Changing Climate https://www.ipcc.ch/srocc/, or the IARPC Arctic Research Plan https://www.iarpccollaborations.org/arctic-research-plan-2022-2026.html.
- (b) Investigations of exploratory nature. Efforts that aim to extract novel information from ICESat-2 data or are using ICESat-2 to investigate parts of the Earth System in a new way are especially encouraged.

Principal Investigators (PI) selected under this program will have additional responsibilities as members of the ICESat-2 Science Team. Notices of intent are due September 14, 2022. Proposals are due October 12, 2022.
Collaboratively shaping ICESat-2 Applications

Have you ever wondered how we work as an Applications Team? We do so collaboratively by leveraging multiple knowledge sources and capacities that span the science-policy-society interface. We recently shared our lessons learned on our cross-disciplinary collaboration for improved decision making at the 13th Annual International Science of Team Science Conference. Here are our key points:

- The ICESat 2 Applications program has engaged the community through active outreach, an Early Adopter/Applied Users program, collaborating with the mission’s Science Team, project science office and Distributive Active Archive Center (DAAC), as well as through publications in a variety of outlets.
- Through this engagement, the ICESat-2’s Applications Program has provided insight into the range of actual and potential uses of ICESat 2 observations and helped communicate the value and impact of mission products.
- A strong Applications Team has provided the foundation for the smooth running of the various engagement and participatory outreach activities.
An interdisciplinary team of scientists has led the Applications team since the start of the program.

- Having a full time Applications Coordinator has allowed for consistent and continuous efforts in support of the Applications Team, as well as a consistent point of contact to facilitate relationship building with the user community.
- Together the Applications team has created a dialogue between users of remote sensing observations and satellite mission scientists that helped build broad support for ICESat 2 applications, as well as clarified key data characteristics uniquely inherent to individual decision processes and operations (e.g., latency, spatial and temporal resolutions).

New Boreal-wide biomass map

The Arctic and Boreal regions are warming faster than anywhere on the planet, and high-resolution forest carbon products help us understand how much carbon is currently stored in these ecosystems, and how it may change in the
future. This new boreal-wide map uses ICESat-2, NASA/USGS Landsat 8, and Copernicus DEM to map biomass at a 30m spatial resolution. The higher spatial resolution version (30m) of the ICESat-2 ATL08 (land and vegetation height) data product used for the map, increases precision and facilitates fusion with 30m gridded products. The product also maps down to 50 degrees North for global coverage between GEDI and ICESat-2. You can explore the map using the Biomass Earthdata Dashboard to get a general sense of how useful it is for your field site or pixels of interest. The product also has an uncertainty layer you can click on and off.

This is an open science product that was created on a new open science platform—the Multi-Mission Algorithm and Analysis Platform. The platform was developed bilaterally by NASA and ESA for collaborative open science based in the cloud. The platform hosts lidar from GEDI and ICESat-2 and in the future SAR data from NISAR and BIOMASS, in addition to reference data. The boreal-wide biomass map is also part of a new Biomass Harmonization Activity, which aims to not only intercompare, but also transparently and consistently validate biomass products from different agencies and academic groups to make recommendations on what products are most useful for policy and reporting.
ICESat-2’s Joseph-Paul Swinksi presented an overview and demo of the new SlideRule tool during our quarterly call with Applied Users on June 13, 2022. This tool will allow you to process ICESat-2 ATL03, ATL06, and ATL08 datasets in the cloud.

Launch webinar

Get to know SlideRule

Earth Sciences Applications Guidebook v1.0
Have you checked out the new Earth Science Applications guidebook? Earlier this year, NASA Earth Sciences launched the Earth Sciences Application Guidebook to help share the wealth of knowledge our NASA community has collectively learned about effective ways and smart practices to enable uses of Earth science information. This is Version 1.0 of the Guidebook and new efforts are underway for an update to add additional content.

Launch Earth Science Applications Guidebook!
Check out these applications of ICESat-2 data. From monitoring water level changes in lakes and reservoirs of the Yellow River Basin to novel satellite-based input maps to inform wind resource modeling, ICESat-2 is helping people across to solve big problems.


Newly redesigned NSIDC website
Access all ICESat-2 data products, data tools, published research, and help documents via the newly redesigned National Snow and Ice Data Center website for ICESat-2. You will find access to the following featured tutorials and much more!

**IceFlow**
Compare decades of harmonized data across pre-IceBridge, IceBridge, ICESat/GLAS, and ICESat-2 data products. Access and visualize data using a download widget, map-based customization, API code examples, and other tools.

**ICESat-2 Hackweek Jupyter Notebook Tutorials**
Utilize the Jupyterbook for the 2022 Hackweek virtual event and learn about the ICESat-2 satellite, data products, data-access tools, and more. Access past hackwork tutorials from the ICESat-2 Hackweek Github Organization listed in the Quick Links

Take me to NSIDC Website

You are receiving this newsletter because you have expressed interest (at a meeting, conference or via email) in becoming involved with the ICESat-2 mission pre-launch application efforts.
Your participation in the ICESat-2 Applications Community helps the mission learn about research relevant to the mission goals, identify new applications for ICESat-2 data products and develop new opportunities to collaborate on exciting research relevant to policy, business, and operational activity needs.

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