National Aeronautics and Space Administration

Science and Societal Benefits of OST Measurements: Communications & Collaboration

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ABSTRACT

Eighteen years of ocean surface topography (OST) measurements brings us the formal migration to an operational mode from the technological advances the OST missions have delivered.

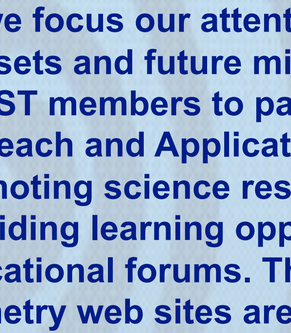
After the third anniversary of the launch of OSTM/Jason-2, we now look forward to the launches of the operational Jason-series satellites. Jason-3 is projected to launch in 2014 with NOAA and Eumetsat leading the efforts, along with partners NASA and CNES. Plans for Jason-4, Jason-CS, and SWOT are underway.

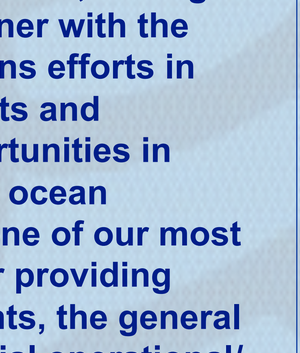
It is increasingly relevant to focus attention and to promote the science and societal benefits of the OST missions. This has been primarily achieved through web interfaces, media stories based on research results, OSTST member activities, and mission milestones. We advance awareness and visibility of OST mission science by focusing on the direct benefits of these measurements to society.

As we focus our attention on current datasets and future missions, we urge OSTST members to partner with the Outreach and Applications efforts in promoting science results and providing learning opportunities in educational forums. The ocean altimetry web sites are one of our most accessible resources for providing target audiences–students, the general public, current or potential operational/ commercial data users, and science colleagues–with updates, information, educational resources, and access to data portals.

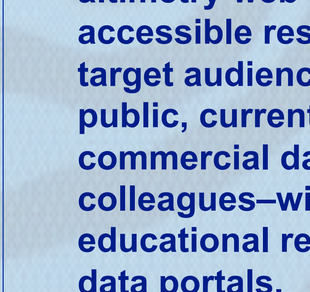
SCIENTISTS HONORED

Dr. Josh Willis
AGU Ocean Sciences Early Career Award





Dr. William Patzert
Athelstan Spilhaus Award



Dr. Dudley Chelton
Henry Stommel Research Award

APPLICATIONS FEATURED

Dr. Y. Tony Song

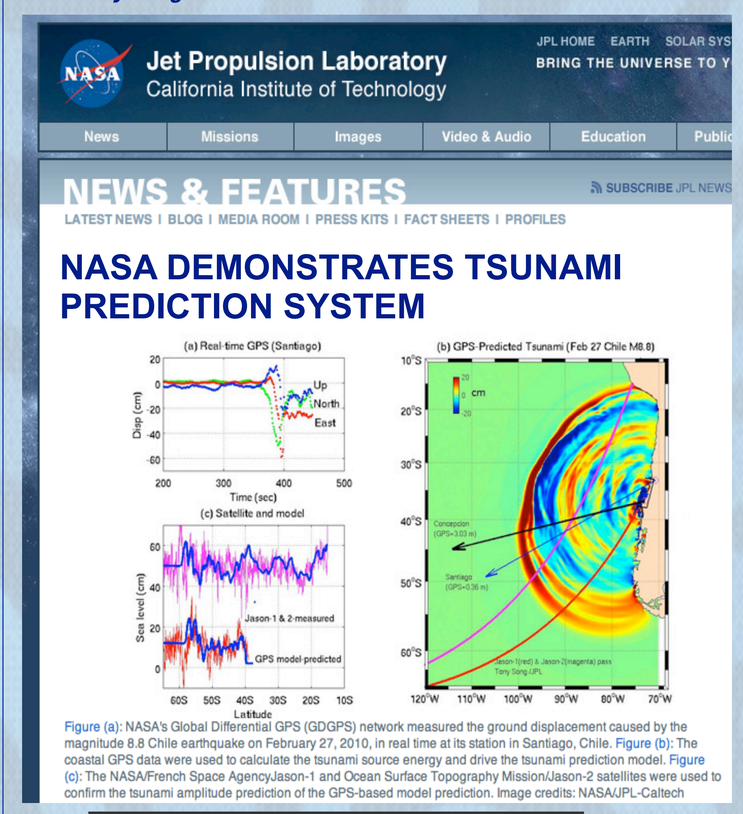
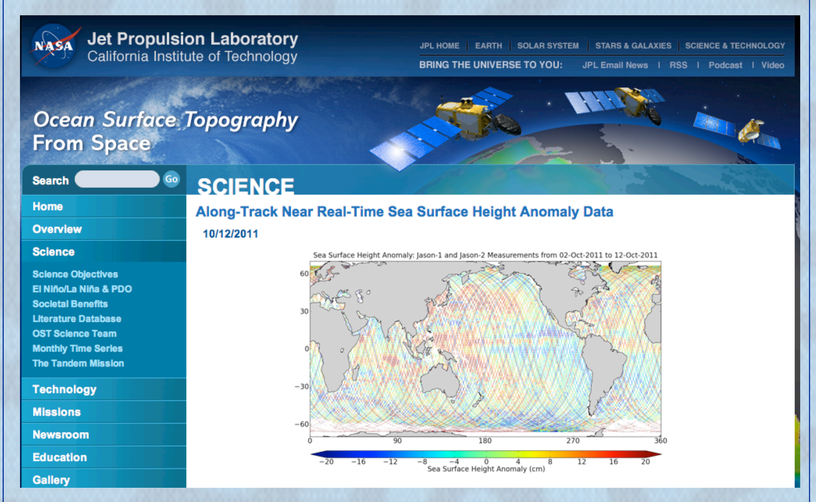


Figure (a): NASA's Global Differential GPS (GDGPS) network measured the ground displacement caused by the magnitude 8.8 Chile earthquake on February 27, 2010, in real time at its station in Santiago, Chile. Figure (b): The coastal GPS data were used to calculate the tsunami source energy and drive the tsunami prediction model. Figure (c): The NASA/French Space AgencyJason-1 and Ocean Surface Topography Mission/Jason-2 satellites were used to confirm the tsunami amplitude prediction of the GPS-based model prediction. Image credits: NASA/JPL-Caltech

Dr. Shailen Desai



ALONG-TRACK NRT SSHA DATA Images Available Online

Daily samples of the along-track near-real-time (NRT) sea surface height anomaly (SSHA) measurements from the Jason-1 and Jason-2 satellite altimeter missions are available on the OST web site. Measurements are typically available within 5 to 7 hours of real time and can be used for meteorological applications (i.e. weather), marine operations (i.e. fishing, boating, offshore operations), and other applications where knowledge of current ocean conditions are relevant.

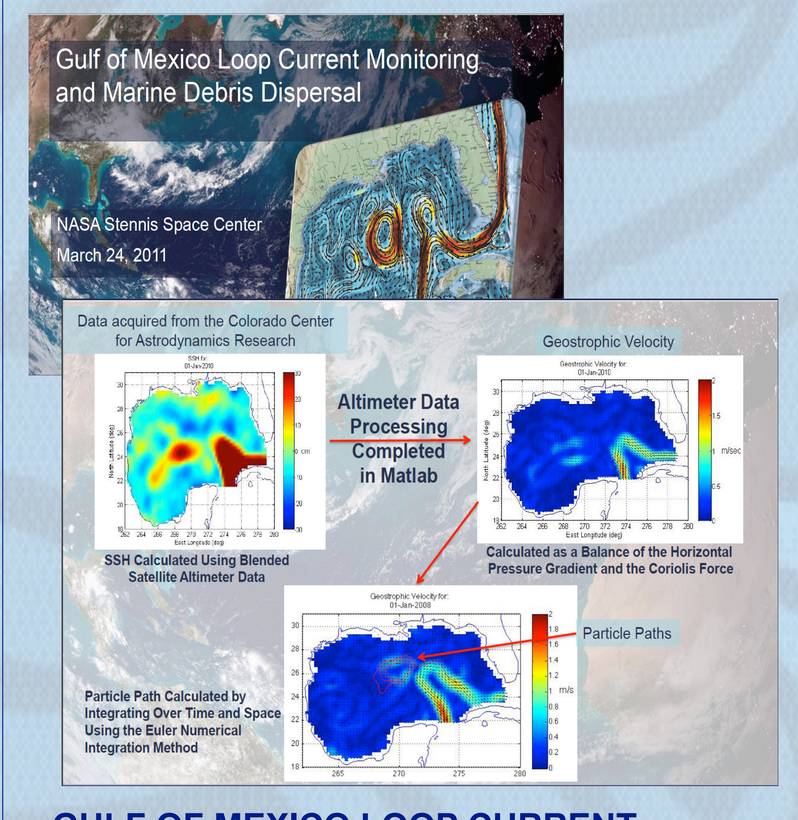
See http://sealevel.jpl.nasa.gov/Science/datasources/ssha/

MEASURING RESERVOIR HEIGHTS WITH ALTIMETRY A NASA DEVELOP Project

Altimetry data is used to adjust global flood models in order to account for the affects of dams on a watershed regions. This method can be used to predict future floods, preventing economic loss and ultimately saving lives.

DEVELOP is a NASA Applied Sciences training and development program. Students work on Earth science research projects, mentored by science advisors from NASA and partner agencies and extend research results to local communities..

For more information see http://www.earthzine.org.



GULF OF MEXICO LOOP CURRENT Monitoring & Debris Dispersal

The NASA DEVELOP Program focuses on finding ways that NASA satellite data can support local communities. This project, based at Stennis Space Center, is to obtain surface circulation data in the Gulf of Mexico for monitoring marine debris trajectories and dispersal, andfor regulating marine debris practices. CCAR provided sea surface height anomaly data created using TOPEX/Poseidon, Jason 1, and Jason 2, as well as European altimeter satellites ERS 1, ERS 2, and Envisat. See web story at earthzine.org.

http://argo.colorado.edu/~realtime/welcome

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