

# The Satellite Altimetry Yellow Pages: An Update



## The NASA Mission

To understand and protect our home planet  
To explore the universe and search for life  
To inspire the next generation of explorers  
... as only NASA can

**Margaret Srinivasan**  
Jet Propulsion Laboratory,  
California Institute of Technology

**V. Rosmorduc**  
Centre National d'Études Spatiales  
Collecte Localisation Satellites,  
Direction Oceanographique Spatiale

**Robert Leben**  
Colorado Center for Astrodynamics Research  
University of Colorado

**A**s the ocean altimetry missions mature, so do the uses and users of this valuable data set. We have established an on-line compendium of operational applications of ocean topography data and encourage science team members to work with us to summarize their work on the site. The Satellite Altimetry Yellow Pages is a directory of ocean altimetry data applications and users. It is designed to serve as a tool to clearly identify the operational and research applications of these highly effective ocean-observing systems, as well as the key players involved. The directory serves as a professional guide for satellite altimetry users, both experienced and new.

We have designed this directory to be the reference standard for the international satellite altimetry community for information on who is using the data, what they are doing with it, and how to contact them. We hope to facilitate communication between current and potential data users, and to encourage close collaboration between scientists and commercial users. The directory describes distinct uses and accurately presents the application of altimetry data.

The Yellow Pages directory currently includes five Yellow Page summaries, with several more in development. The directory "lives" on the AVISO Web site (<http://www.aviso.oceanobs.com/html/swt/yp/>), with a link from the NASA Ocean Surface Topography Web site. A standardized format provides a consistent layout for all entries to aid in information and content searches.

The focus of each Yellow Page summary is distinct with respect to the use of the data. Interesting and compelling graphics are featured with each summary. New summaries presented here include the "SSALTO/DUACS" near-real-time multimission altimeter products for operational oceanography, the OSCAR real-time surface current analysis project, and Steller sea lion research in the North Pacific Ocean. Summaries are typically featured on the AVISO and "Sealevel" Web sites. We strongly encourage science team members to support this effort and contact us about featuring your work.

For more information:

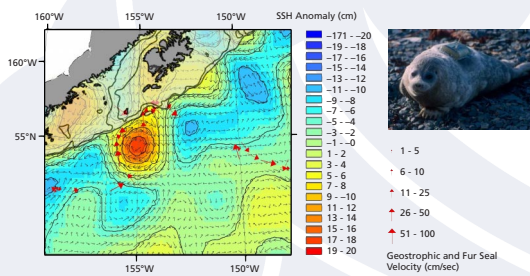
<http://sealevel.jpl.nasa.gov>

<http://www.aviso.oceanobs.com>

<http://www-ccar.Colorado.EDU/~realtime/welcome/>

## Steller Sea Lions

NOAA's National Marine Mammals Laboratory tracks Steller sea lions in the North Pacific Ocean using blended altimeter data, including TPJ OSDs (SSH and current velocity vectors). The data indicate that the sea lions travel hundreds of miles across the North Pacific from shore to feed around the edges of ocean eddies. The figure indicates a warm-core eddy spun off the Alaska Stream. The image is one tagged animal, with red vectors show heading and mean speed on a given day.



Jeremy Sterling, a fisheries biologist at National Marine Mammals Laboratory (NMML), is using CCAR data products to interpret winter-time fur seal migratory patterns. These animals often linger near mesoscale features in the deep abyssal Pacific basin and on the Gulf of Alaska continental slope. Summertime behavior of fur seals is also being investigated. One of the unique aspects of fur seal feeding in the Bering Sea during the summertime is that subpopulations have specific foraging areas — some are off-shelf and others are on-shelf feeders. The research team also provides data to NOAA's Pacific Marine Environmental Laboratory (PMEL) for a project examining eddies in the Gulf of Alaska. CCAR supports these research programs in the Gulf of Alaska and Bering Sea with data and images.

## Yellow Pages Coming Soon

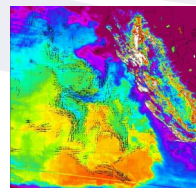


## Petroleum operations support in the Gulf of Mexico

Capt. Karl Greig, captain of a large anchor handling tug boat owned by Edison Chouest Off-shore, uses altimeter data images for route finding when he tows semi-submersible drilling rigs used in deep water oil and gas exploration. A recent operation moved a rig from the Mississippi Canyon block 68 to Mustang Island block 68, a total of 425 nautical miles. Typical towing speeds are 3 to 4 knots, so avoiding and/or using eddy currents significantly reduces transit times, in this case by over 50 hours. Capt. Greig uses overlays of geostrophic velocity vectors on colored magnitudes values accessed from the CCAR Web site by satellite phone. Estimated savings: \$650,000 in rig downtime and towing costs.

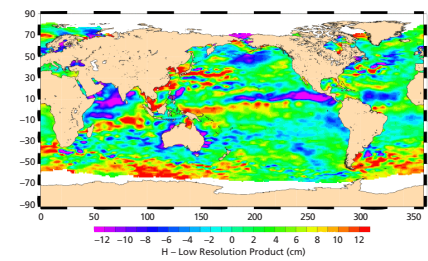
## California coastal current monitoring

Surface currents computed from sequential AVHRR infrared imagery is merged with altimetry data to map coastal currents off of California. The Web site is <http://www-ccar.Colorado.EDU/research/calif/>.



## SSALTO/DUACS

## Near-real-time multimission altimeter products for operational oceanography



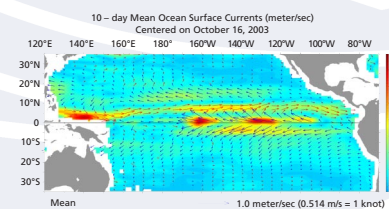
SSALTO/DUACS - NRT  
MSLA - Merged  
product 200311029

The SSALTO/DUACS multi-altimeter processing system provides operational oceanography and climate forecasting centers with directly usable, high-quality, near-real-time altimeter data.

SSALTO/DUACS near-real-time data are available:

- for scientific applications (GODAE, seasonal/climate prediction centers) provided that a data use agreement is signed with CNES. Data are accessible via FTP (with readme files and read procedures);
- or freely available for data older than one month, via a Live Access Server (gridded data), or via anonymous FTP (gridded and long-track data). CLS remains in charge of the commercial applications of these near-real-time products (off-shores, fisheries, environmental protection applications). This application marks a major step forward for operational oceanography.

## OSCAR



Near-real-time ocean surface currents derived from satellite altimeter and scatterometer data.

OSCAR is a pilot processing system and data center providing operational ocean surface velocity fields from satellite altimeter and vector wind data. The regional focus is the tropical Pacific, where the value for a variety of users is demonstrated, specifically for fisheries management and recruitment, monitoring debris drift, larvae drift, oil spills, fronts, and eddies, as well as ongoing large-scale ENSO monitoring, diagnostics, and prediction. Additional uses may include search and rescue, and naval and maritime operations.

For more information about the Satellite Altimetry Yellow Pages, e-mail Margaret Srinivasan ([mss@jpl.nasa.gov](mailto:mss@jpl.nasa.gov)) or Vinca Rosmorduc ([Vinca.Rosmorduc@cls.fr](mailto:Vinca.Rosmorduc@cls.fr)).

The Yellow Pages Web site is —  
<http://www.aviso.oceanobs.com/yp/>