Welcome to the
Asia-Pacific Data-Research Center

The APDRC is building towards a vision of one-stop shopping of climate data and products for our users.

Our mission is to increase understanding of climate variability in the Asia-Pacific region by developing the computational, data management, and networking infrastructure necessary to make data resources readily accessible and usable to researchers and general users, and by undertaking data-intensive research activities that will both advance knowledge and lead to improvements in data preparation and data products.

Easy Access to Data and Products via the APDRC Servers
(atmospheric, oceanic, and air-sea flux)

Live Access Server

EPIC for All Data Sets
**Direct Access to APDRC Datasets**

*Restricted data in RED*

- List all data sets

**List data sets by discipline:**
- Air-sea flux data
- Ocean data
- Atmospheric data

**List data sets by source:**
- In-situ data
- Satellite data
- Reanalysis data
- Model data

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**APDRC Datasets**

Datasets served by the APDRC may be accessed through the options below. Data has been categorized by the data type (e.g., *in-situ* observations, model data, etc.), server type (e.g., EPIC data, LAS data, etc.), region (by ocean basin), grid type (regular grid, along-track data, single point time series, etc.), or by variable name. Note that there is not a single path to a particular dataset. To directly access a specific dataset, select it from the comprehensive list on the left. Otherwise, select from the following pull-down menus. Note that "local-access only" datasets are marked in red.

**Select one of the following options:**

- **Access data by server type:** All
- **Access data by data type:** All
- **Access data by region:** All
- **Access data by grid type:** All
- **Access data by variable:** Any/all variables

- Temperature
- Salinity
- Nutrients
- Bathymetry
- SST
- Sea level
- Surface winds
- Surface heat flux
- Phytoplankton
Home | Data | Partners | Servers

Servers

APDRC's Service

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What's New?

Do you want to compare NRL's NLOM SST with Tchoku Univ. New Generation merged sst?

New Links

Experimental Real Time Forecasting of Southeast Asia Intraseasonal Variability link to Georgia Tech
SST (NRL/NLOM, 28 Sept. 2004)
(A global, surface layer product)
SST (NRL/NLOM, 28 Sept. 2004)
UH/IPRC
Asia-Pacific Data-Research Center (APDRC)

Jay McCreary, Peter Hacker, Jim Potemra, Yingshuo Shen
East-West Center, Honolulu, HI
30 September 2004

http://apdrc.soest.hawaii.edu

APDRC Mission-
To increase understanding of climate variability in the Asia-Pacific region by:
* developing the computational, data management, and networking infrastructure necessary to make data resources readily accessible and usable by researchers;
* undertaking data-intensive research activities that will both advance knowledge and lead to improvements in data preparation and data products.
International Pacific Research Center at the University of Hawaii

~50 scientists (data and product users)

4 Research Themes

* Indo-Pacific Ocean Climate
* Regional Ocean Influences
* Asian-Australian Monsoon System
* Impacts of Global Environmental Change

Data Center Activity

Asia-Pacific Data-Research Center (APDRC)

~17 researchers and technical staff (4-5 FTEs)
APDRC: vision, users, products

Vision: to provide web-based, one-stop shopping of climate data and products.

Users: IPRC researchers, plus state, national, international researchers, applications users and the general public.

Products: atmospheric, air-sea flux, oceanic; satellite-based and model-based. (biogeochemical products in the future)
APDRC Activities

• Data Server System operation and development

• Data management and product archiving

• Value-added product development

NEW-
Applications development
  1) GODAE Product Server

  2) Hawaiian Islands high-resolution regional models (ocean and coupled) (exportable to other island regions)

  3) New activities in the PRIDE (NOAA) context (to be determined)

• User Interface development

• Public relations and outreach
APDRC Data Server System

Application Software:
Matlab, IDL, ferret, GrADS, Fortran, JOA, ncBrowse

Desktop

Web Browser

LAS, EPIC

DODS/OPeNDAP Catalog Aggregation Server

Local data

Remote data 1

Remote data 2

Remote data N

Distributed Data

User
APDRC Servers
(web-based search, display, access)

* Sun Enterprise 450, 4 processors, 6 TB RAID storage
* EPIC Server for in situ (station versus gridded) data
  2,499 WOCE Current Meter files
  9,773 WOCE CTD stations
  12,241 WOCE bottle stations
  78,936 Argo profiles (September 2004)
  1,061,480 Upper Ocean Thermal profiles
* Live Access Server (LAS) for gridded products
* DODS/OPeNDAP Server for product transfer between sites
* Catalog-Aggregation Server (CAS) for multi-file aggregation
Historical data retrieval

Locations of 18,742 stations (123 cruises with 332,343 bottle samples done during 1969-1993) acquired from the Far Eastern Research Hydrometeorological Institute (Vladivostok, Russia).
Value-added product development

T(z) Quality Control at CSIRO

Figure 1: IOTA holdings as of January 2004. Black indicates fully quality controlled casts, other colours yet to be quality controlled.
Motivation to be a GODAE Product Server

* UH, APDRC and Hawaiian Islands regional plans
* GODAE and GOOS needs and plans
* Pacific Island needs stated at the 2002 Fiji Workshop
Statement of the Problem in the GODAE Context
(Global Ocean Data Assimilation Experiment),
As the international community participates in the demonstration phase of GODAE,
(2003-2005)
there is an overarching need for rapid delivery of data products from satellites and models to the broad user community including regional operational entities.
APDRC as a GODAE Product Server

- NWP Centers
  - Atmospheric fields
  - GODAE Data Server at Monterey
    - Data Assembly Centers (FL0AT, ALTIMETRY)
      - Qca, process of data, error statistics, data products
        - Assimilation-ready products
          - GODAE Assimilation Centers: FNMOC, NAVOCEANO, NCEP
            - Data Services
              - Data quality/Errors
                - Data; error statistics; metadata; data products; GODAE-specific data sets
              - Products
                - Observing system design and assessment
                  - SST products; feedback about surface flux products

- Application Centers: public safety; climate adaptation; fisheries; coastal resource management
  - Specialized products
    - Users: Pacific Island Nations
      - Product assessment
        - GODAE Product delivery

Legend:
- Sources of Inputs
- GODAE common
- Users of GODAE outputs
- IPRC & EWC coordination
- GODAE partners
- POIS NETWORK
GODAE Product Server Functions

* Intercomparing assimilation products between the different modeling/assimilation centers.

* Promoting GODAE for potential applications (including research).

* Serving application centers, service providers and/or end-users in an efficient way.

(GODAE Development and Implementation Plan; Draft 1, May 2002.)
GODAE Intercomparison

Compare distributed GODAE model outputs

Define region

Select time
GODAE Intercomparison

Live Access Server

You may modify the appearance of plots through the "Options" page.
The navigation bar on the left will take you directly to any LA3 page.

JPL ECCO-adjoint

GFDL
Pacific Islands Workshop Recommendation

The October 2002 Workshop on the Potential Applications of Ocean Observations in the Pacific Islands (Fiji Workshop) held in Nadi, Fiji recommended:

* The establishment of a Pacific Islands Ocean Information System.

* To serve: operational forecasting agencies, Pacific Island governments, businesses, resource managers, regional organizations, scientific institutions.

* To address: public safety, climate adaptation, fisheries, coastal resources.

(Four working groups will lead effort.)
Pacific Islands and the EEZ
Pacific Ocean Information System (POIS) Product Needs

* Products: real time, forecasts, climatologies

* Parameters:

  temperature, salinity, sea surface height, surface layer velocity, winds, waves (including storm surges).
APDRC plans for POIS in the Context of GODAE

* Begin the implementation of a Pacific Ocean information system (POIS) node at the APDRC;
* Facilitate regional capacity building;
* Identify selected regional, operational products meeting the local users needs;
* Implement rapid delivery of products to regional operational and general users;
* Provide user evaluation of the regional products to the product originators; and
* Serve the products from the GODAE North Pacific model intercomparison activity.
SST, Samoa Region (WOA01, Sept. Climatology)
Surface layer-
~0-100 m

Resolution-
1/16 degree
~6 km

(1/32 degree coming soon)
NRL/NLOM, 28 Sept. 2004, Samoa Region

Sea Surface Height (SSH)

Surface Current Vectors
From R. Lukas

Surface height and flow from NRL/NLOM

Jan. 27th

Feb. 21st

IPRC/APDRC modeling and data assimilation

Issues:

1) Many different ocean observations are needed for forecast initialization and verification

2) Problem of downscaling operational models by factor of 10
• Potential PRIDE Activities
  Develop a linked web-page for products
  Acquire and serve additional GODAE products
  Develop high-resolution regional island models
  User-evaluation of products (with E. Shea)
APDRC Plans (2004-2006)

• Continue base, global activities.
• Partner with Pacific Island regional activities and other server nodes on product serving.
• Develop a Hawaii regional model for research and applications users:
  * to downscale GODAE operational ocean models (to ~1 km or less); and
  * to make the model exportable to other island regions and users.

Thank you!
Choose Dataset

(Click on box to select dataset!)

Profile Datasets
CTD Bottle XBT
Argo Float Data
Pacific Ocean
Indian Ocean
Atlantic Ocean

Selected Datasets Information

# of files: 11120
Date Range: 1998-05-13 to 2003-02-14
Selected Dataset(s):

- Pacific ARGO Float Data, CTD -- (1120 files)

Location Range: (Mouse-Drag on map or enter values to text fields to select the region.)

- 47.5N
- 140.5E
- 169.3W
- 25.3N

Date Range:

- Minimum Year: 1998
  - Month: May
  - Day: 13

- Maximum Year: 2003
  - Month: February
  - Day: 14

Required Depth Range:

- (m) - (m)

Month Sub-Range:

- January
- December

Match Sub-string in File Name:

- 290017

Attribute Name

- ----- Select -----

Match Sub-string of Character String Attribute value in Data File:

Specify the Sorting Order:

- Cruise ID or Station ID (Default)
Conceptual Framework for PRIDE

US/NOAA Context

- Global/Regional Observations
- GCOS/GOOS/IOOS
- Bi-Laterals with Australia, Japan, New Zealand
- Pacific Climate Information System
- WMO/NOAA RCCs
- RISA
- IPRC APDRC
- New NOAA Facility in Hawaii
- Pacific Services Center
- NOAA Data Centers
Vision Statement

PRIDE

US/NOAA Context

PRIDE:

Pacific Region Integrated Data Center for Environmental Ocean, Climate, and Ecosystem Information and Services

Advance NOAA’s mission objectives and meet critical regional needs for ocean, climate, and ecosystem information to protect lives and property, support economic development and enhance the resilience of Pacific Island communities in the face of changing environmental conditions.