

HYCOM and GODAE Product Server Activities at the IPRC: A status report

**Peter Hacker
Asia-Pacific Data-Research Center (APDRC)
IPRC, Univ. of Hawaii**

Outline:

- 1) Data and Product Serving**
- 2) HYCOM Regional model**

**HYCOM NOPP GODAE Meeting
RSMAS, Univ. of Miami
27-29 October 2004**

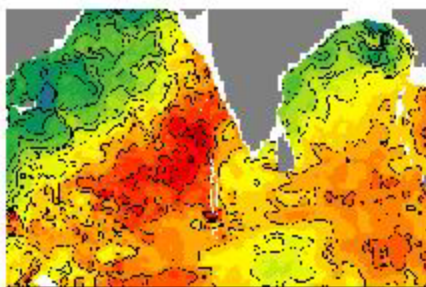
[Data](#)[Partners](#)[Servers](#)

Welcome to the Asia-Pacific Data-Research Center

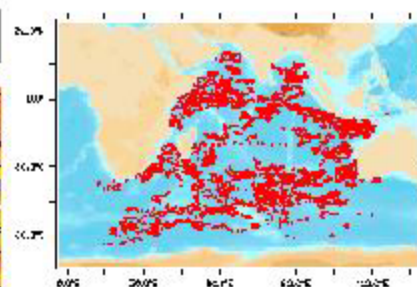
The APDRC is building towards a vision of one-stop shopping of climate data and products for our users.

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](#)

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:

Access data by data type:

Access data by region:

Access data by grid type:

Access data by variable: ☐ Any/all variables

☐ Temperature

☐ Salinity

☐ Nutrients

☐ Bathymetry

☐ SST

☐ Sea level

☐ Surface winds

☐ Surface heat flux

[Home](#) | [Data](#) | [Partners](#) | [Servers](#)

Servers

APDRC's Service

Grid and Sequential Data	In Situ Data
Live Access Server	EPIC for All Data Sets
Downloading Data	EPIC for Argo Data
DAPPER	EPIC for WOCE UOT
OPeNDAP Servers	EPIC for WOCE WHPO Data
GDS Server	EPIC for WOCE Mooring
WOD on LAS	FNMOC/GODAE Daily Real-Time Profile Data

What's New?

Do you want to compare NRL's NLOM [SST](#) with Tohoku Univ. New Generation [merged sst](#)?

New Links

[Experimental Real Time Forecasting of Southeast Asia Intraseasonal Variability](#) link to Georgia Tech



Activities-

- **Data Server System operation and development**
- **Data management and product archiving**
- **Value-added product development**

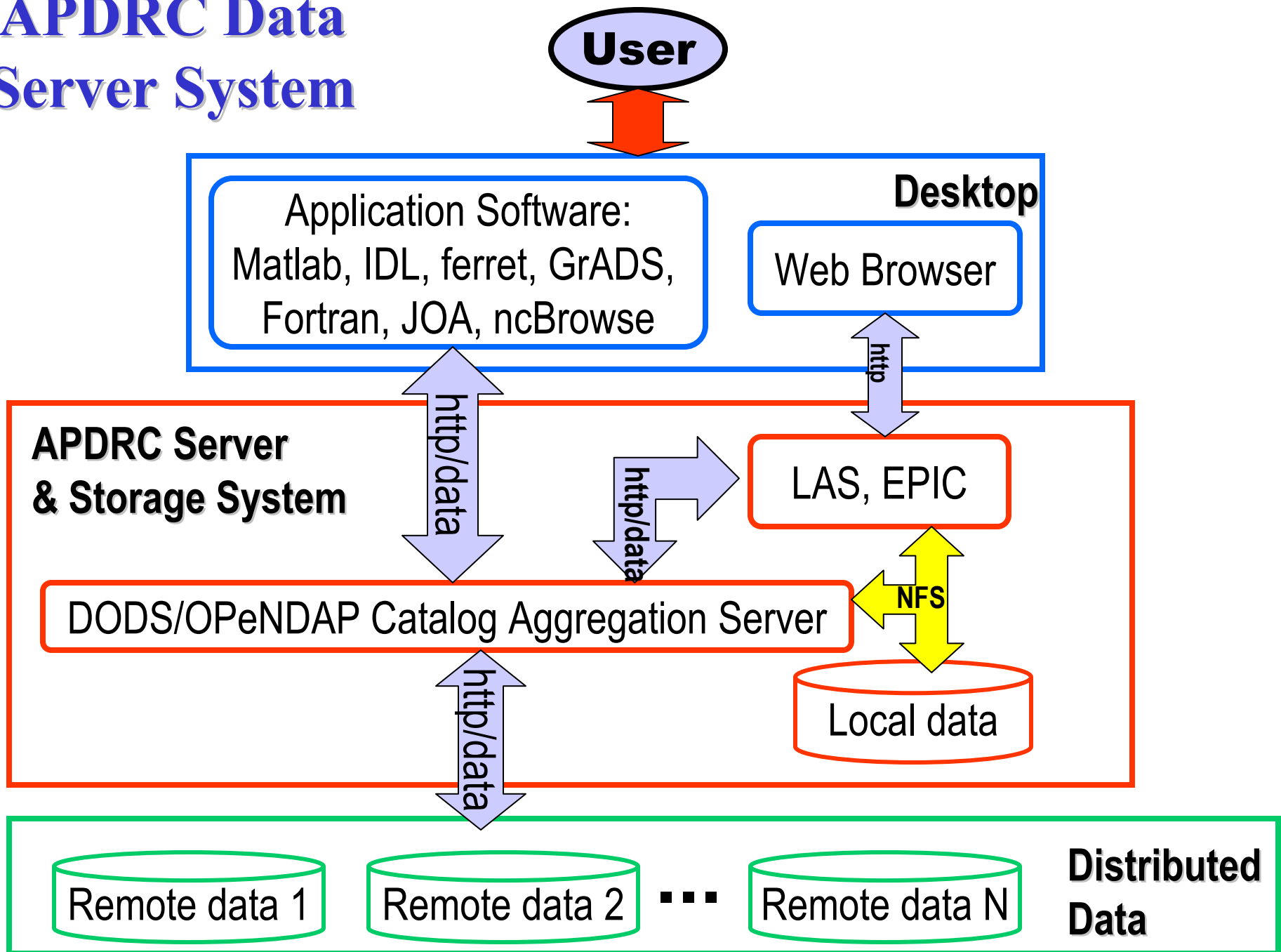
NEW-

Applications development

1) GODAE Product Server

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

APDRC Data Server System

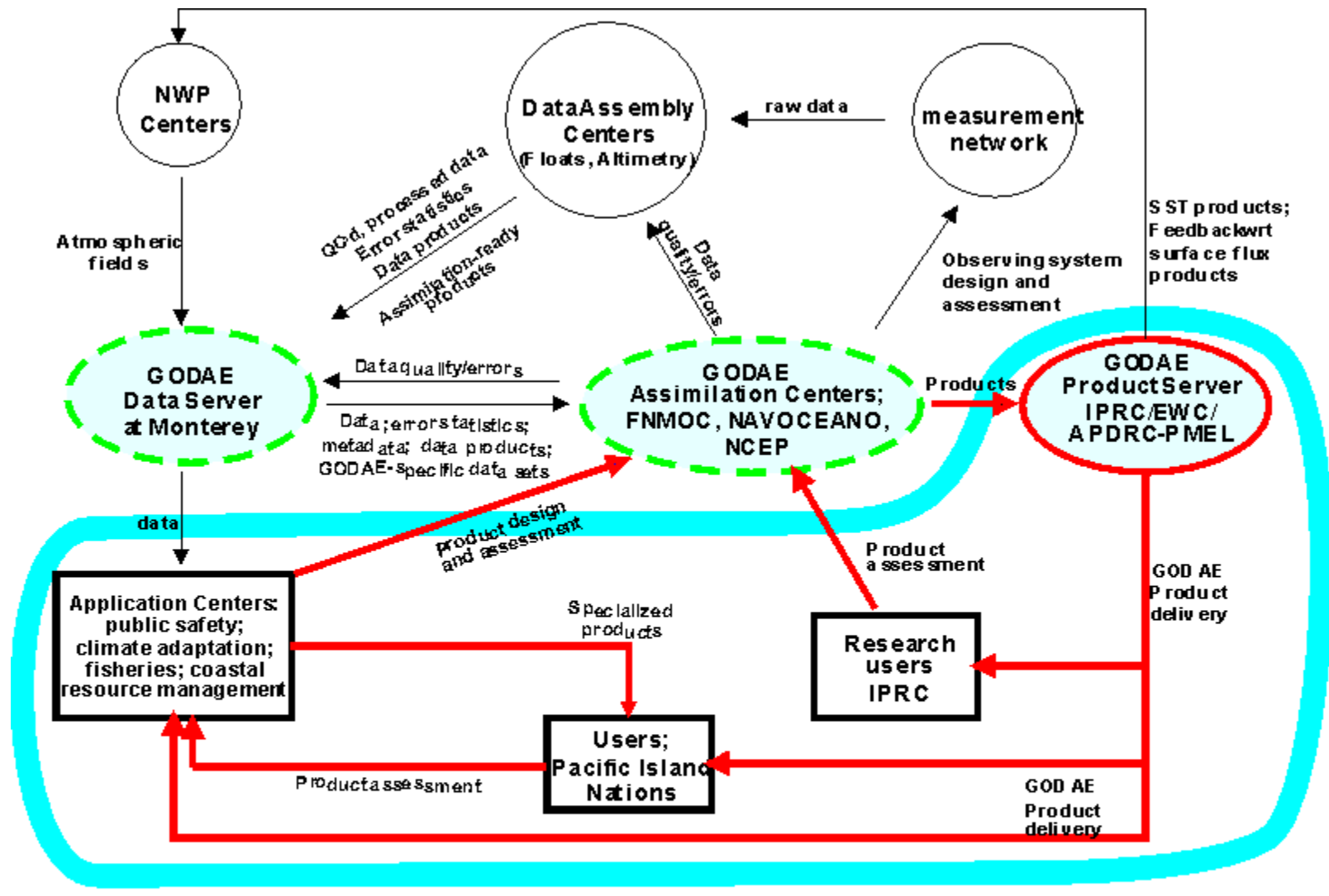


APDRC Servers

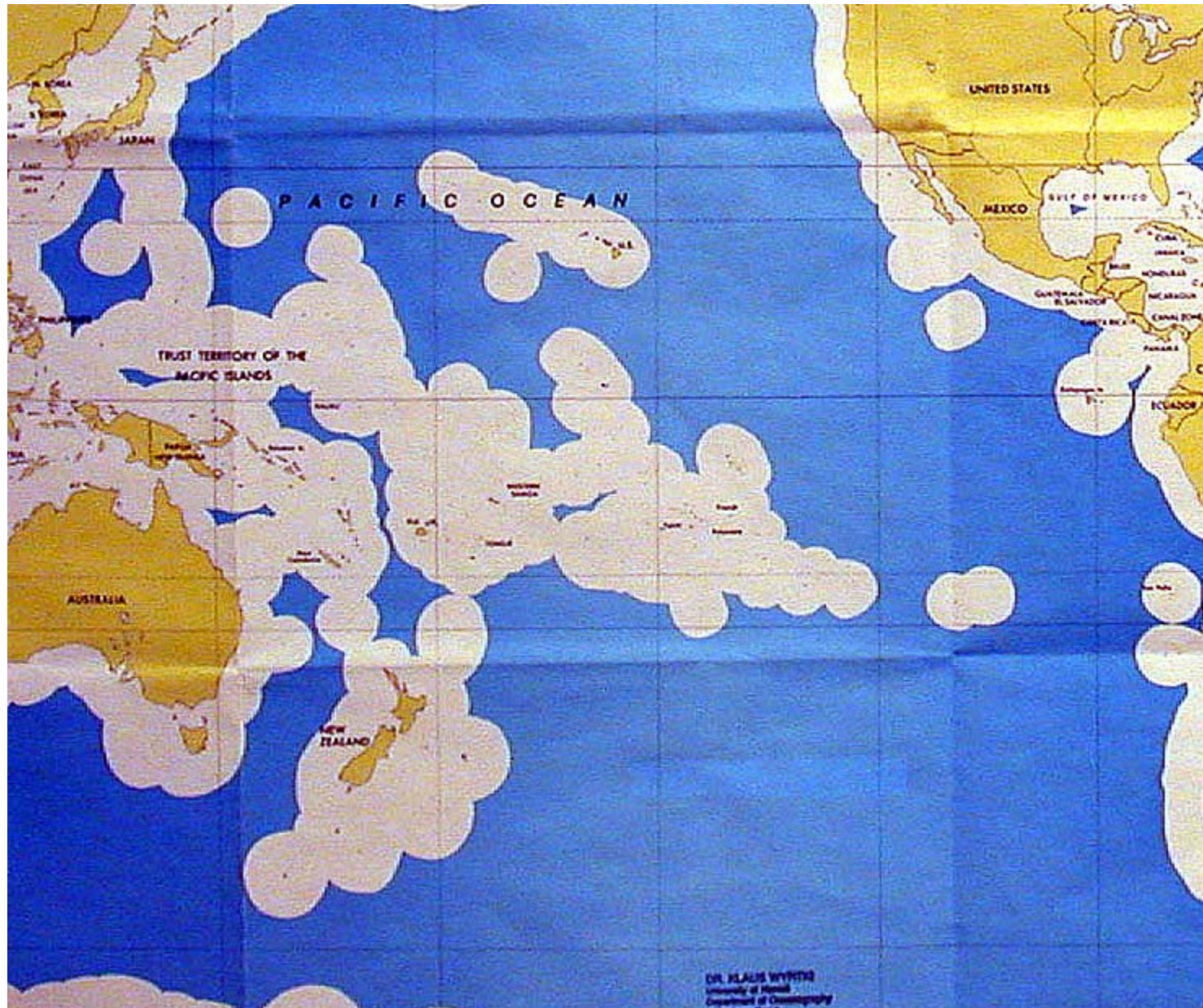
(web-based search, display, access)

- **Sun Enterprise 450, 4 processors, 8 TB RAID storage**
- **EPIC Server for in situ (station versus gridded) data (from PMEL)**
- **Live Access Server (LAS) for gridded products (from PMEL)**
- **Grads DODS Server (GDS) (from Univ. of Maryland)**
- **DODS/OPeNDAP Server for product transfer between sites**
- **Catalog-Aggregation Server (CAS) and GDS for multi-file aggregation**

APDRC as a GODAE Product Server



Pacific Islands and the EEZ



UH HYCOM Activity Goals

- Help serve standard HYCOM products to users
- Implement high-resolution (operational) HYCOM for Hawaii using Pacific HYCOM for boundary conditions.
(much regional data for evaluation and assimilation)
- Include tides (barotropic and baroclinic)
- Evaluate in Hawaii region
- Implement parallel effort for other island region users
(Guam, Samoa, Fiji,.....)
- Identify users, their needs and get user feedback
(research, applications, and general users)

Large-scale domain for Hawaii region

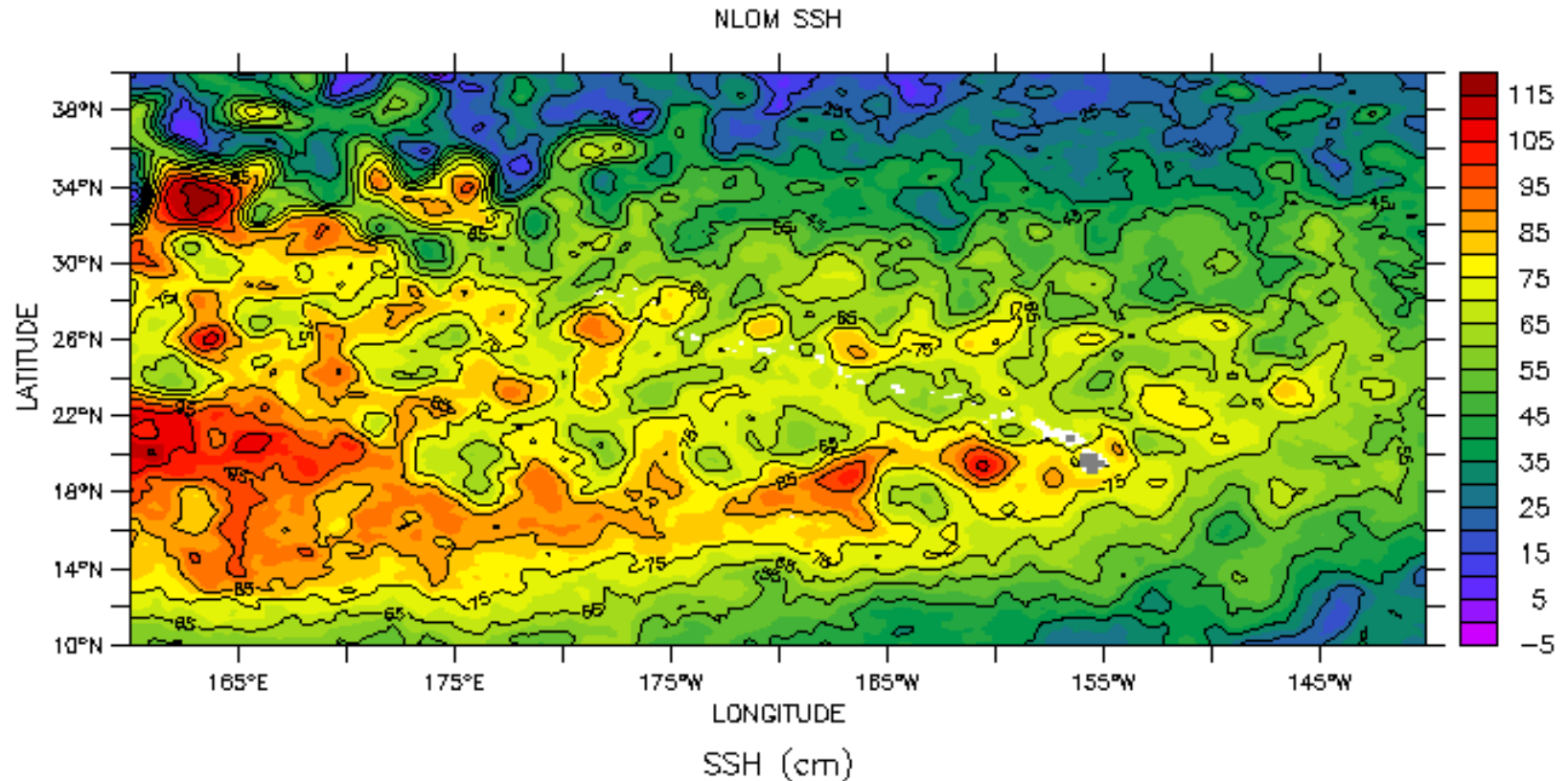
NRL NLOM, 24 October 2004

IAS 6.3.0/Ferret 5.60 -- NOAA/PMEL

DDDS URL: <http://opdc.soest.hawaii.edu:9090/ddds/>

TIME : 24-OCT-2004 00

DATA SET: nlom_ssh



Regional domain

NLOM, 1/16 degree, 24 October 2004

SSH

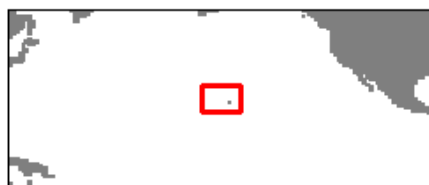
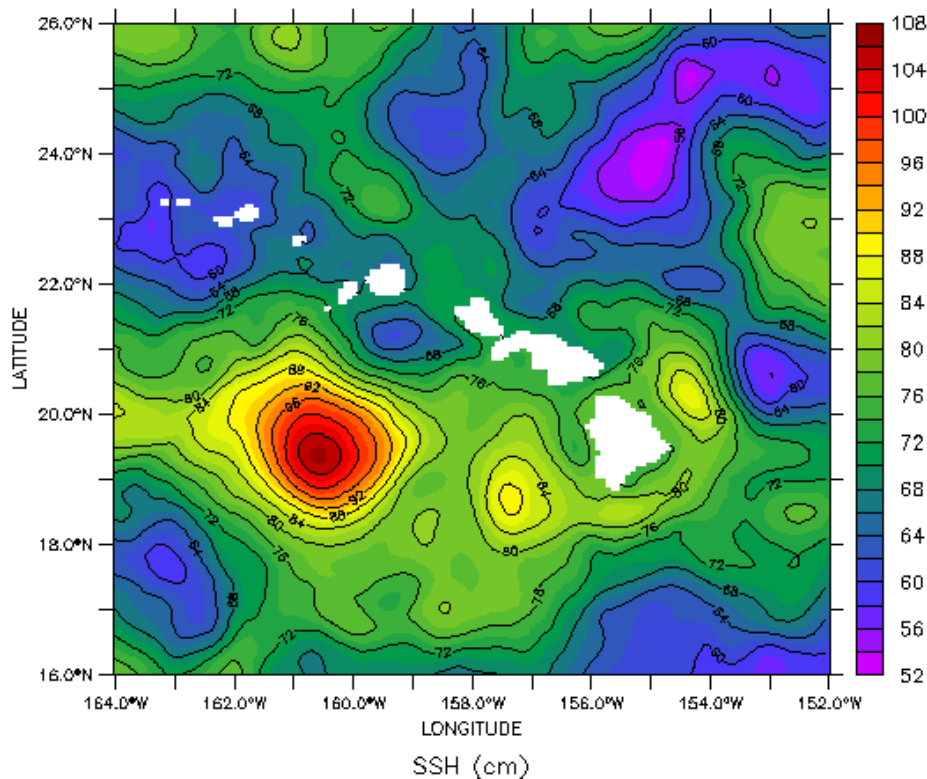
LAS 6.3.0/Ferret 6.80 -- NOAA/PMEL

DDDS URL: <http://opdra.soest.hawaii.edu:9090/ddds/>

TIME : 24-OCT-2004 00

DATA SET: nlom_ssh

NLOM SSH



SST

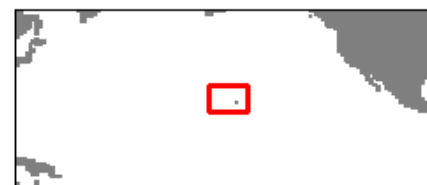
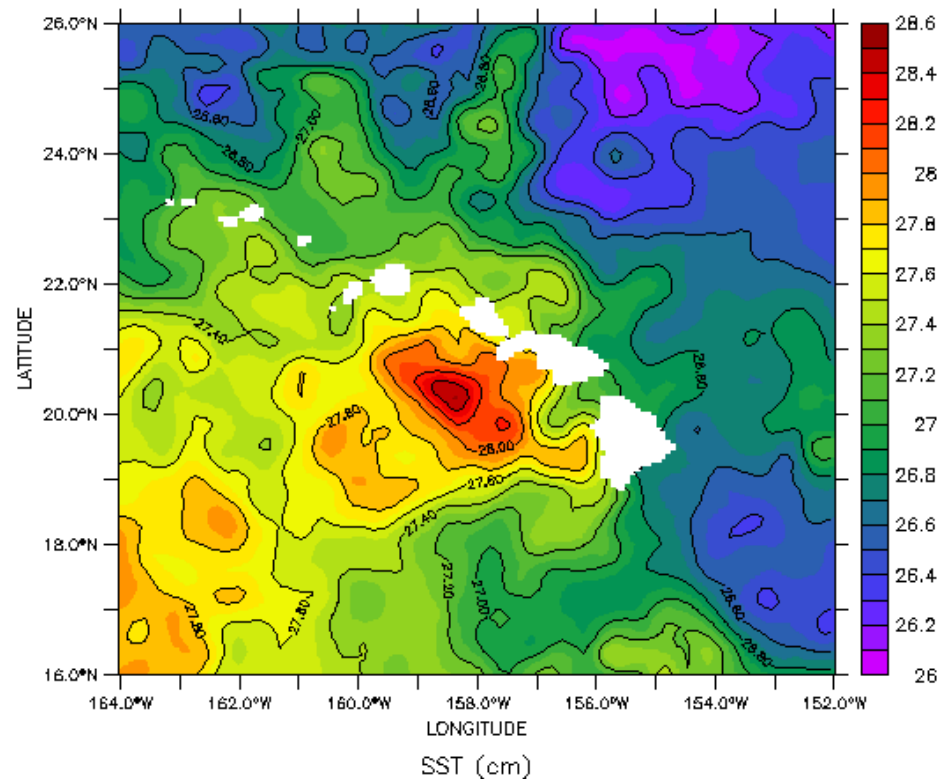
LAS 6.3.0/Ferret 6.80 -- NOAA/PMEL

DDDS URL: <http://opdra.soest.hawaii.edu:9090/ddds/>

TIME : 24-OCT-2004 00

DATA SET: nlom_sst

NLOM SST



Staff

Yanli Jia	50%	Team Leader, implement model
Max Yaremchuk	25%	implement assimilation scheme
Jim Potemra	25%	regional model evaluation
Peter Hacker	10%	“ “ “

UH effort started in May 2004

Tasks

- Downscale by factor of ~ 8 to resolution of ~ 1 km
- Optimize vertical grid for local density field
- Include 1 km bathymetry
- Include tides
- Experiment with domain size, especially western boundary
- Force with local UH and NWS winds, ~ 2 km resolution
(operational product exists)
- Implement assimilation scheme
- Develop regional web pages for regional users

Accomplishments

Pacific HYCOM, 1/12 degree

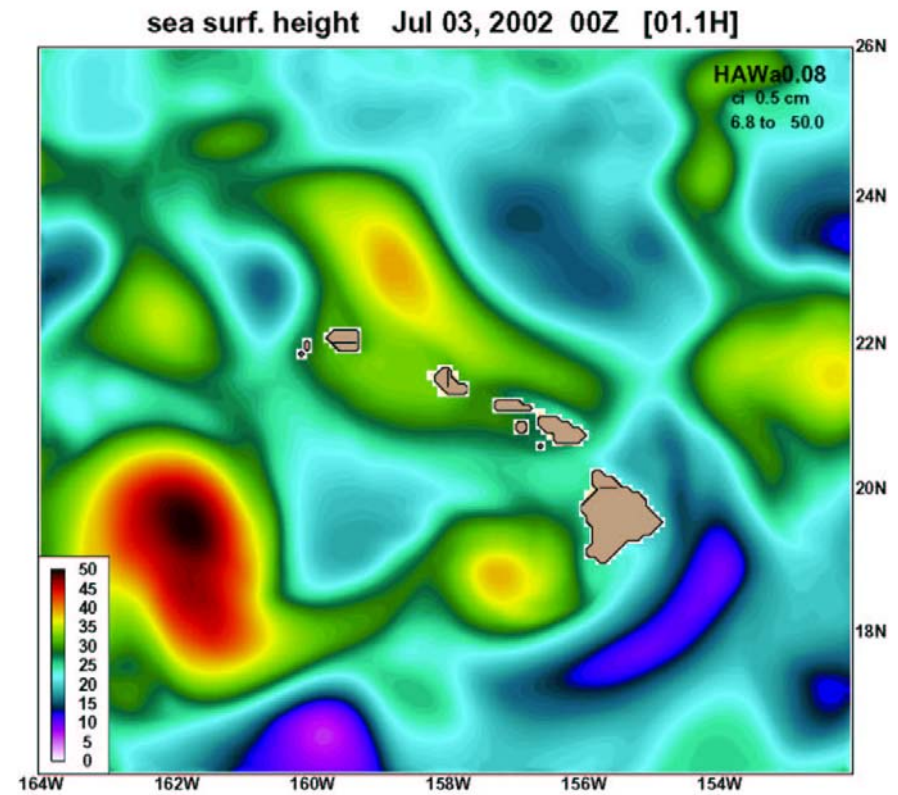
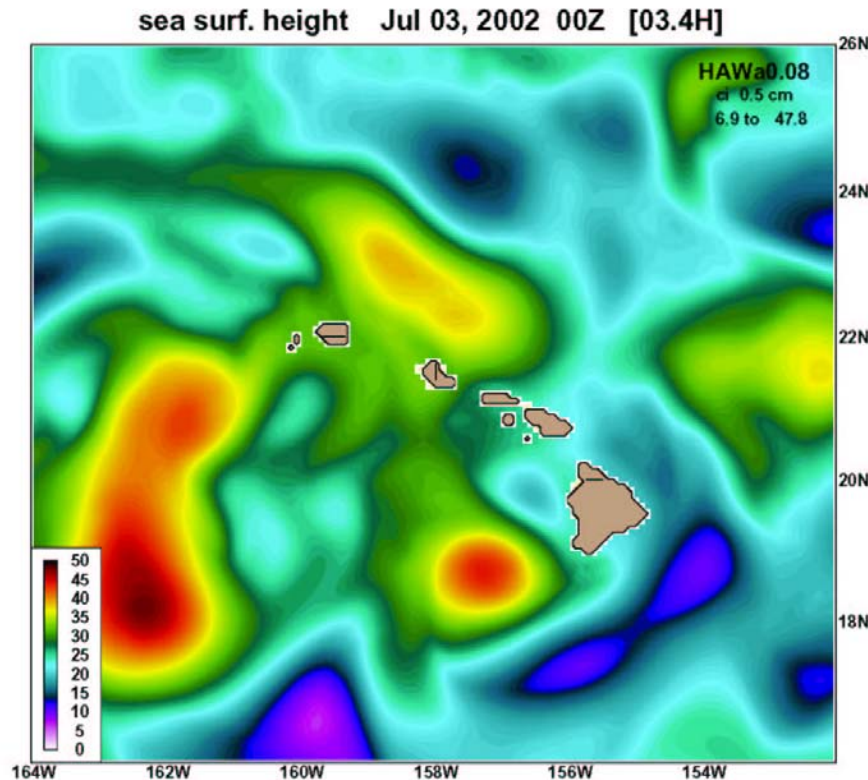
Jan. 2001-July 2002

SSH

Hawaii Regional, 1/12 degree

* relax to BC at domain edge

* 18 month run



Domain-
16-26 N, 152-164 W

Technical issues

IPRC computer: SGI Origin 3000

Time for run at 1/12 degree:

1 processor- 23 hours per model month

16 “ ~2 “ “ “ “

Experimentation is feasible on our machine.

Forecasts are feasible.

Summary

- APDRC receives NOAA funding to support GODAE infrastructure
- APDRC can help serve standard HYCOM products
(fine resolution in time and space. Indo-Pacific region)
- APDRC will develop and serve regional, high-resolution products
- We would like to coordinate closely with NOPP HYCOM activities

<http://apdrc.soest.hawaii.edu>