Plymouth Marine Laboratory PML

ESA Felyx: High Resolution Diagnostic Data Set System

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What is an HR-DDS System?

The HR-DDS systems extract subsets and metrics from source data that are then accessible to users in a tailored manner for a wide range of applications.

The Felyx High Resolution Diagnostic Data Set (HR-DDS) system is currently under development and is the latest evolution of a generalised High Resolution Diagnostic Data Set system funded by ESA. It draws on previous prototype developments and experience in the GHRSST, Medspiration, GlobColour and GlobWave projects.

Felyx is fundamentally a tool to facilitate the analysis of EO data: it is being developed by IFREMER, PML and Pelamis. The aim is to provide Earth Observation data producers and users with an opensource, flexible, and reusable tool to allow the quality and performance of data streams from satellite, in situ, and model sources to be easily monitored and studied. New to this project, is the ability to establish and incorporate multi sensor match-up database capabilities. The systems will be deployable anywhere and even include interaction mechanisms between the deployed instances.

The primary role of Felyx is to work as an extraction tool. It allows for the extraction of subsets of source data over predefined target areas (which can be static or moving). These data subsets, and associated metrics, can then be accessed by users or client applications either as raw files or through automatic alerts. These data can then be used to generate periodic reports or be used for statistical analysis and visualisation through a flexible web interface and can be directly download by the users as data files.

Overview





System Design

Engine



Philosophy

State-of-the-art: Build on, and learn from, previous HR-DDS system pilot projects (GHRSST, GLOBWAVE, GLOBCOLOUR, etc.) **Sustainability:** Developing for the long-term – operation and

Data Flow and Processing





Title	Description	Site code	Delete
Time series example of gross METOP errors	There are extremely large deviations in SST over the course of 12 hours, up to 10 K $$	ghr020	Delete this MyDDSette
Example very cold METOP.	METOP 6AM is 10K colder than METOP 6PM. AVHRR17 and AVHRR18 agree with the warmer METOP	ghr020	Delete this MyDDSette
Very cold METOP	Look at the last 4 histograms. They show the distribution of SST from the warmer METOP.	ghr020	Delete this MyDDSette
High Coverage Morning 6AM	Really good example	ghr020	Delete this MyDDSette
<u>Atlantic day night issue</u>	Same as pacific, but opposite times	ghr063	Delete this MyDDSette
Atlantic example evening cooling	This one is made spurious by gridding issues, but still provides some insight.	ghr063	Delete this MyDDSette
Example north of Russia	Cold evening METOP observations, not as pronounced by this example has NAR, NAVO and AATSR obs.	ghr066	Delete this MyDDSette
Example o everything working just right		ghr121	Delete this MyDDSette
This one is just plain wierd!	Might already be marked, not sure.	ghr020	Delete this MyDDSette
AATSR cold compared to METOP	AATSR one degree colder compared to METOP in Antarctic, and swath times only 10 minutes apart.	nmi070	Delete this MyDDSette



The Felyx Project

http://hrdds.ifremer.fr/

Trend estimation, cross-correlations, consistency.



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