

International Energy Agency (IEA), Solar Heating and Cooling Program (SHC), Task 36 on Solar Resource Knowledge Management, User survey is completed

Description

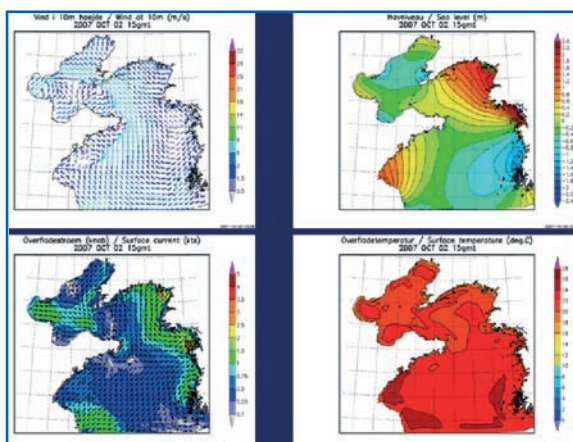
YEOS, an EU FP6 Specific Supported Action for GEOSS, aims to stimulate operational oceanography in Yellow Sea countries by integrating best practices in EU, China and Korea, and address regional challenges on climate change impacts, disaster prevention, coastal zone management etc by demonstrating operational oceanography in the region.

Through integrating best practices in observation, forecasting and information system, a state-of-the-art regional high resolution weather-ocean-ice-wave-sediment transport forecasting system for Yellow Sea can be developed and demonstrated, based on following components:

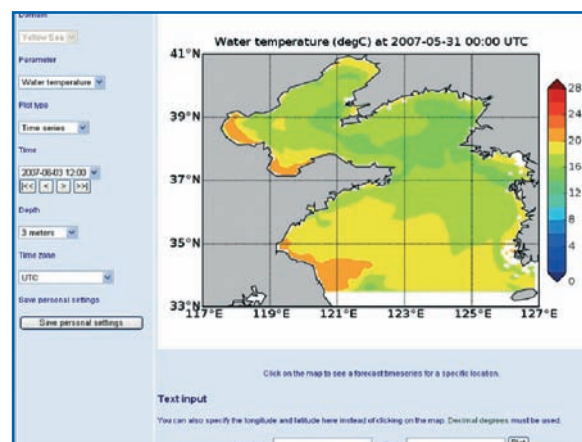
- Denmark: operational weather model (7.5km resolution), coupled ocean-ice model (5km resolution), daily satellite SST (5km resolution, OI&SAF), information systems
- Germany: sediment transport Model
- China: wave model (5km resolution), data assimilation, in-situ observation system
- Korea: in-situ observation system

YEOS will jointly build up a proto-type Yellow Sea observation, forecasting and information system, demonstrate the system in August 2008, when Olympic Sailing competitions will be in Qingdao waters, and disseminate YEOS products in different user levels especially to stake-holders and policy makers.

Thanks to co-funding from Danish Meteorological Institute (DMI), significant achievements have been made. *An operational ocean-weather-ice forecasting system* has been put into place for Yellow Sea (including East China Sea for weather prediction). The system is running in DMI to provide 36 hour high resolution forecast twice a day. *A daily operational SST* product in 5km resolution has been made by DMI. Two information systems have been established (Fig. 1): one for general YEOS information and products (<http://ocean.dmi.dk/yeos>), and the other for user applications with discovery, viewing and downloading functions (<http://ocean.dmi.dk/apps/yellowsea>). *A pre-operational wave model* for Yellow Sea & East China Sea has been set up by China with weather forcing from DMI; The DMI ocean-ice model has been installed in China. German sediment transport model has been coupled with DMI ocean model, and Chinese data assimilation experts are working together with DMI to implement their scheme in DMI ocean model.

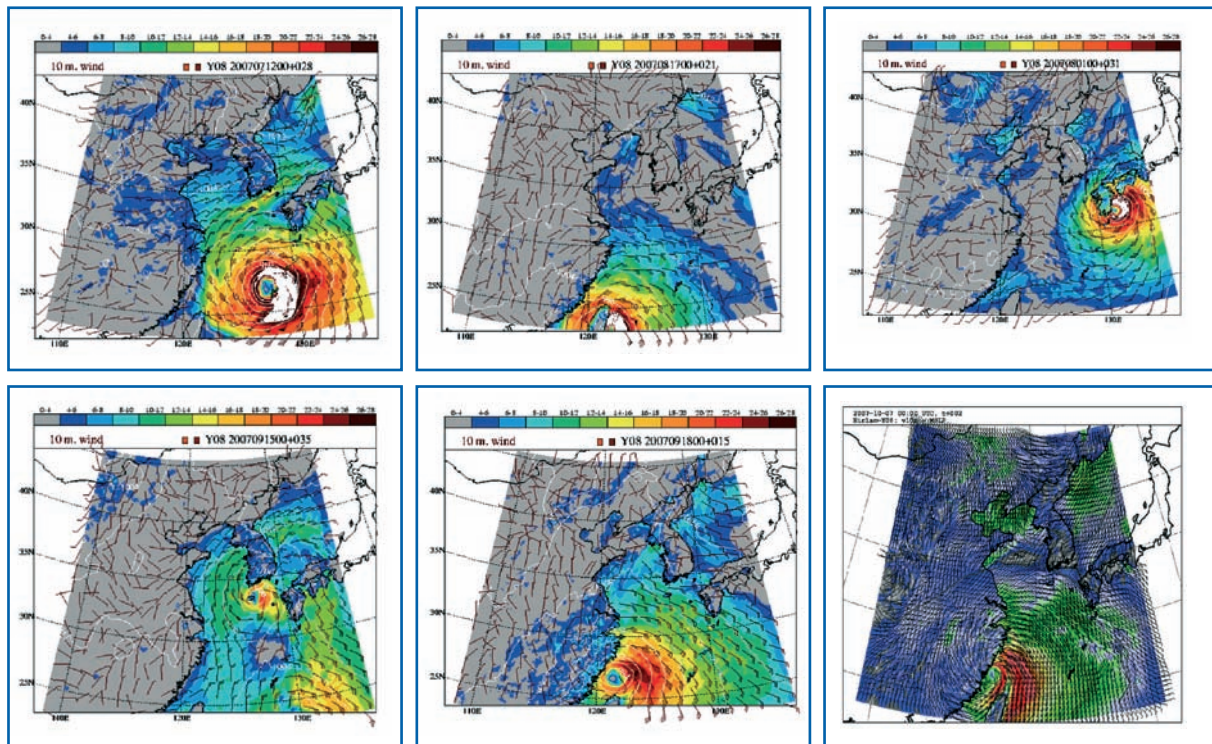


YEOS information system shows hourly forecasts of winds, sea level, currents and water temperature.



User-defined, dynamic discovery, viewing and downloading functions on 3D ocean parameters.

Some examples of predicted typhoons in summer 2007 by DMI are given in Fig. 2.



Wind fields of 2007 typhoons predicted by YEOS system. All typhoon tracks were correctly predicted. Upper panel (left to right): Man-Yi, Sepat, Usaqi; Lower panel (left to right): Nari, Wipha and Krosa.

Added Value

The project itself is funded as an EU contribution to GEO. GEO will further disseminate YEOS products from Europe to Asia users via GEONETCast (EU FP7 proposal DevCoCast). YEOS is a successful example demonstrating in-depth regional cooperation under GEO, also a combination of data, model and information systems. There are still obstacles in exchanging in-situ observations, which may be an area that GEO can add its impact. A long-term platform under GEO to support such regional cooperation is highly appreciated.

Relevance to GEO

Relevance to disasters, weather and climate SBA's. Transverse Area as a Regional information System.

Participants

YEOS is coordinated by DMI (contact: Jun She, js@dm.dk), with partners from Germany (GKSS), China (First Institute of Oceanography, China-Korea Joint Ocean Research Centre, Institute of Atmospheric Physics, North China Sea Marine Forecasting Centre, Ocean University of China) and Korea (Korean Ocean R&D Institute).

Current Status and Next Steps

The project duration is 30 months, with a start from 1 April 2007. It is expected that YEOS will demonstrate a state-of-the-art Yellow Sea operational oceanography system. However, it is still a challenging task for how to use YEOS achievements in China/Korea national operational activities since this needs high level decision-making. On the other hand, Southeast Asian countries also urgently requires such a service for storm-surge forecast, coastal engineering and disaster prevention etc, and YEOS system is ready to be extended to cover entire NW Pacific coastal/shelf seas. Finally scientific challenge is huge in order to address regional issues (e.g., typhoon prediction, ICZM etc). A proper platform and funding mechanism should be provided under GEO in order to ensure its sustainability.