

## Ensembles of Global Weather Forecasts

### Description

The THORPEX Interactive Grand Global Ensemble (TIGGE) is a key element of the THORPEX programme which aims to accelerate improvements in the accuracy of 1 day to 2 week weather forecasts. THORPEX is an important part of the World Weather Research Programme of the WMO. The objectives of TIGGE are,

- To bring together in 3 data archives (at the Chinese Meteorological Agency, the US National Centre for Atmospheric Research (NCAR) and the European Centre for Medium Range Weather Forecasting) the entire suite of 384 daily global weather forecasts from 10 Numerical Weather prediction centers (out to 14 days ahead) and provide easy access via the internet for research and development and demonstration projects.
- Explore new methods of combining ensemble weather forecasts from different centers and develop a better understanding of forecast errors.
- Test new concepts for producing ensemble based predictions of high impact weather wherever it occurs and evaluate development of a prototype Global Interactive Forecasting System (GIFS)

### Added Value

GEO aids this effort by encouraging global forecast centers to contribute weather forecasts and by supporting meetings/conferences

### Relevance to GEO

This activity is GEO Task WE-06-03. It has general relevance to GEO societal benefit areas that will benefit from access to advanced multi-model global weather forecasts and the derived products, especially in areas related to risk management, disaster mitigation, energy, health etc.,

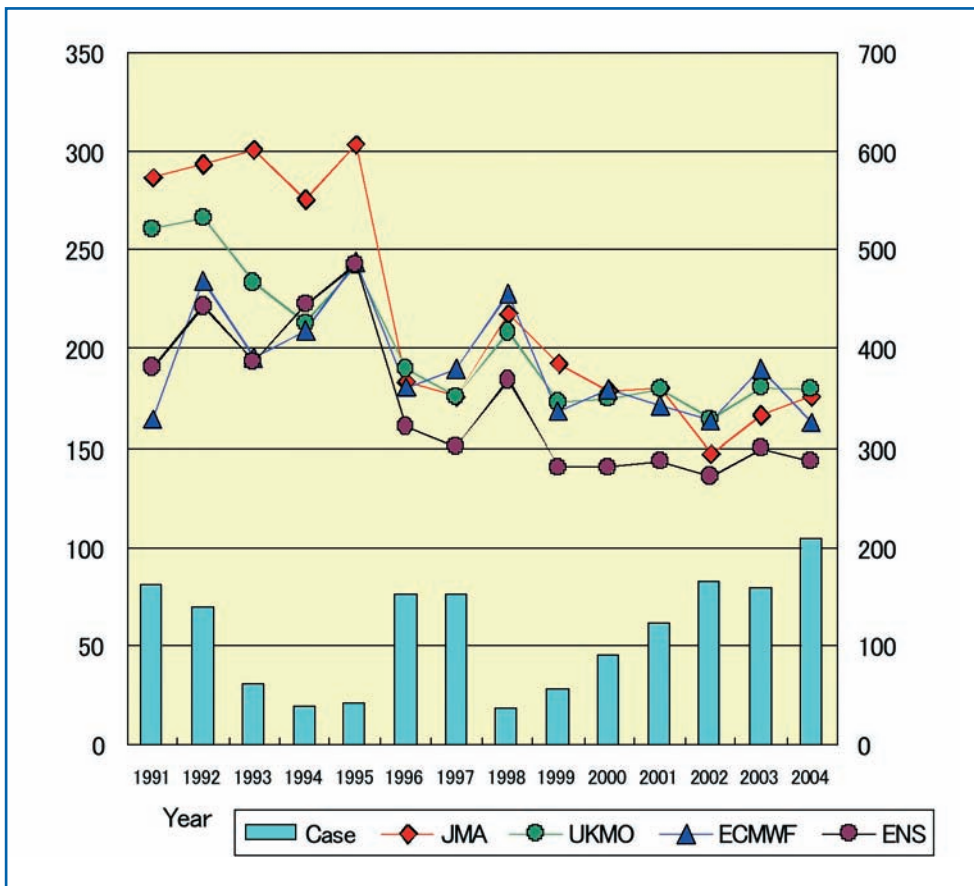
### Participants

The current participants are Australia, Brazil, Canada, China, France, Japan, Korea, USA, UK and ECMWF

### Current Status and Next Steps

The project is currently in the first Phase. Global ensemble weather forecasts from 5 providers are now being received by the 3 archive centers. It is expected that data from all 10 providers will be available by the end of 2007. Around 30 registered users are at present downloading data from the NCAR site and the ECMWF site recently opened. The opening of the CMA site is expected by end 2007. It is expected that the archives will be declared open for general user access in the next few months. A user workshop will be organized in 2008.

Priority is now being given to development of tools to access and manipulate data (e.g interpolation to limited area lat-long grids and further development of the data portals). TIGGE will also help speed the introduction of the WMO Weather Information System (WIS) by early use of the GRIB 2 code. During the second Phase (which still requires funding) the data archives will be distributed over a number of repositories and speed of access will be improved. The data will be freely available over the internet for research and education use about 48 hours after it was initially produced by the originating centre. Real time access can be requested for field experiments and development projects.



Early results of the assessment of the benefits of multi-model ensemble forecasts for 72-hr predictions of the tracks of tropical cyclones over North-Western Pacific. An ensemble composed of ECMWF, JMA and UKMO prediction has a better skill than any of the components (Courtesy Y. Takeuchi, JMA)