Update on Japanese activity on climate projection

Masahide Kimoto (CCSR, Univ. Tokyo)

The 1st phase of the 5-year Earth Simulator-Global warming project (so-called Kyousei Project) ended in Mar 2007.

The 2nd phase of the 5-year ES-warming project by MEXT(*) and a new 5-year impact study project by MOE) have been initiated in Apr 2007.

(1) MEXT "KAKUSHIN" Project
(Official name: Innovative Program of Climate Change Projection for the 21st century)

ES will be upgraded in mid-2008 (2+alpha times faster)
Preparing new models to conduct AR5 official runs in FYR 2009

Team 1: Long-term global change projection (PI: Tatsushi Tokioka, JAMSTEC/FRCGC)
- High-resolution AOGCM (T213L56 Atmos + 1/4x1/6 L48 Ocean) - MIROC
- Initialization by recent 30-40yr observations + ~10 member ensemble prediction
- Flood/drought risk+cost assesment
  - Coupling AOGCM w/ ocean bio-geochem + fish growth models
  - High-res nested ocean modeling

Team 2: Near-term climate prediction (PI: Masahide Kimoto, CCSR/Univ. Tokyo)
- Integrated earth system model (T42L80 Atmos + 1x1.4 L44 Ocean)– MIROC-kissme
  - Carbon cycle, dyn. veg., aerosols, stratosphere/troposphere chemistry
- Impacts on crop yields, high tides
- Global cloud resolving model study

Team 3: Extreme event projection (PI: Akio Kitoh, MRI/JMA)
- Ensemble time-slice experiments w/ global 20km AGCM nesting 1km CSRM near Japan
- Impact on hydrology, flood risk assessment

(2) MOE "Feel" the climate change project (PI: Akimasa Sumi, Univ. Tokyo)
(Official name: Integrated Research on Climate Change Scenarios to Increase Public Awareness and Contribute to the Policy Process)

- Impact assessment
- Uncertainty assessment
- Public communication

using AR4 model results & AR5 models later

HQ (PI: Seita Emori, NIES)

Subprojects
- evaluation of model performance for individual phenomena (w/ metric) (PI: Yukari Takayabu, CCSR)
- dynamical downscaling of climate scenarios (PI: Izuru Takayabu, MRI)
- downscale socio-economic scenarios (PI: Yoshiki Yamagata, NIES)

(3) A GEOSS-related Data Integration and Analysis System (DIAS) (PI: Toshio Koike)
Aiming at establishing "a system of systems" by integrating multitudes of climate and environment related data (incl. CMIP3)