ENSO Simulation Intercomparison Project (ENSIP)

ENSIP is a coordinated study to compare the simulations of ENSO in coupled ocean-atmosphere models

Organized by:

> GOALS Numerical Experimentation Group (NEG1)
> Climate Variability and Predictability (CLIVAR) Programme
> World Climate Research Programme

Coordinator: M. Latif (Max-Planck-Institut fuer Meteorologie)

1. Experiment :

For a typical 20 year period of a coupled model simulation, the following figures and tables will be produced:

- Hovmöller diagrams of equatorial SST in the Pacific. The diagrams can be compared to those published in the intercomparison paper by Neelin et al. (1992) and will provide a basic indication of the climate drift and the performance with respect to the annual cycle and ENSO.
- Hovmöller diagrams of climatological mean equatorial SST in the Pacific as deviations from the annual mean. These diagrams can be compared to those published in the intercomparison paper by Mechoso et al. (1995). Since the annual cycle and ENSO are strongly linked to each other, a realistic simulation of the annual cycle is an important prerequisite to obtain a realistic ENSO simulation.
- Correlation of Niño-3 (90°W - 150°W, 5°N - 5°S) SST anomalies with heat content anomalies along the equator as a function of time lag, in order to obtain a basic picture of the models' representations of ENSO dynamics, timescales and propagation characteristics.
- A table giving details on the SST/wind stress feedback (i.e. the ratio of the zonal wind stress and SST anomalies in the centres of action).
- A table with the standard deviations of Niño-3 and Niño-4 SST anomalies
- A table with the correlations of Niño-3 and Niño -4 SST anomalies with two Indian Summer Monsoon indices, the Monsoon Circulation Index (MCI) and the Monsoon Rainfall Index (MRI). MCI is based on Webster and Yang (1995) and is defined as the zonal wind (U) at 850 mb minus U at 200 mb averaged over 40°E -100°E and 0-20°N. The rainfall index MRI is defined as the precipitation averaged over 70°E-100°E and 10°N-25°N. The two indices should represent 4-months averages over June, July, August and September.

2. Model Output :

Those participating in the ENSIP study, will provide the following data :

- SST, wind stress (both components) and upper ocean heat content (averaged over the upper 300-400 m) for the Pacific Ocean between 5^0N - 5^0S. Note, that full values are requested.
- The two Monsoon indices as defined above.

Modelling groups will be invited to submit to PCMDI (address below) by **31 December 1996** the appropriate history files [dimensioned (longitude, latitude, time) for each variable] on 8mm low- or high-density exabyte tape.

By end of summer 1996, PCMDI will make a software library of data transmission standards available to the modelling community. Use of this library on model output prior to submission of the data to PCMDI will facilitate processing, quality control, archiving, and analysis of the data. Submission of data preprocessed with this software is strongly recommended since it will ensure timely processing by PCMDI. If preprocessing your output with the afore-mentioned software library is not possible, acceptable alternative formats include DRS, net CDF, GRADS (with control file), GRIB/GRADS compatible (with control file), or 32-bit floating point IEEE binary (with Fortran programme to read data). Requested one-dimensional time series indices (e.g., Webster/Yang windshear) should be provided in ASCII. PCMDI is also assembling the extensive range of data being collected as part of NEG-2's CMIP. Details of how NEG-1 will co-ordinate its activity on this project with CMIP will be discussed with the NEG-2 CMIP panel.

Please send your data to :

Lawrence Livermore National Laboratory
PCMDI
Attn.: Dr. K. Sperber
P.O. Box 808, L-264
Livermore, CA 94551, USA
Fax: 1-510-422-7675
e-mail : sperber@space.llnl.gov

References :

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