

Community Earth System Models

(COSMOS)

Memorandum of Understanding

A major challenge for the climate research community is the development of comprehensive Earth system models capable of simulating natural climate variability and human-induced climate changes. Such models need to account for detailed processes occurring in the atmosphere, the ocean and on the continents including physical, chemical and biological processes on a variety of spatial and temporal scales. They have also to capture complex nonlinear interactions between the different components of the Earth system and assess how these interactions can be perturbed as a result of human activities.

Accurate scientific information is required by government and industry to make appropriate decisions regarding our global environment, with direct consequences on the economy and lifestyles. It is therefore the responsibility of the scientific community to accelerate progress towards a better understanding of the processes governing the Earth system and towards the development of an improved predictive capability. Important tasks are to develop and use advanced software and computing environments in Europe, in which the most advanced Earth system models can be developed, integrated and applied.

The undersigned institutions agree to create the *network “Community Earth System Models” (COSMOS)* with the purpose of working together and cooperating towards the development of community models for the Earth system. These institutions include university institutes, research institutes and centres, meteorological services, and computer centres.

COSMOS is intended (1) to foster development and evaluation of state-of-the-art climate and Earth system models, (2) to facilitate focused model inter-comparison in order to assess and improve these models, (3) to encourage exchanges of software and model results, and (4) to help to establish the necessary computational resources. COSMOS adopts the PRISM¹ philosophy of developing flexible model structures with interchangeable model components, standard interfaces and universal couplers.

COSMOS organizes yearly meetings to convene its partners and institutions in the community with an interest in Earth System modeling. This is intended to stimulate exchange of ideas, component models and findings from experiments with the community model(s).

COSMOS facilitates applications of additional external funding for running the network infrastructure and for solving specific scientific questions.

¹ <http://prism.enes.org>

The present Memorandum of Understanding will take effect after being signed by at least five partners. Thereafter, COSMOS will be open to additional partners.

The Memorandum of Understanding will remain in force for a period of three years, unless the duration is modified with approval of the COSMOS members at a two-third majority.

Date _____

Place _____

Institution _____

Signature _____