

Preface

This report is the first publication to disseminate research progress achieved in 1992 by use of super-computing facilities set up in Center for Global Environmental Research (CGER). At the time of CGER's establishment in November 1990, it was widely recognized among researchers that computing facilities with ultra high speed and large memory capacity is indispensable for promoting global environmental research, especially for the numerical simulation of complicated phenomena with very large spatial-temporal scale, such as climate modeling, geophysical fluid dynamics, remote sensing, and etc., which cannot be done by conventional computers. After deliberated survey of required performances of supercomputer by the Selection Committee consisting of potential power users and facility managing staff, NEC SX-3 model 14 was introduced in CGER in March 1992.

The managing policy and mechanism of CGER's supercomputer system to promote efficient use of the facility for global environment research are as follows:

In principle, this facility is internationally opened to all the researchers engaging in global environment research. Users need to be certified for its usage every year. Generally, research plans using the supercomputer are proposed by researchers every late in March. CGER, with periodical and occasional advise and evaluation on the proposed research subjects given by the Super Computer Steering Committee consisting of ten prominent scientists, has the responsibility to efficient and adequate allocation of the resources of this facility, such as CPU time and volume of memory, to each research subject.

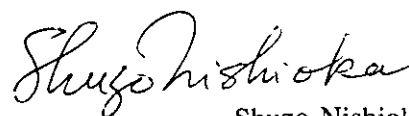
The environmental Information Center (EIC) of National Institute, which is dealing with all the information affairs of National Institute for Environmental Studies (NIES), manages routine operation of the machine manufacture (NEC). In order to efficiently utilize the facility, a close and friendly communication between users and managing staff are essential. Therefore, CGER holds two meetings to achieve such better communication; one is the meeting of Supercomputer User Working Group consisting of power users of the facility, held twice a month, to know the needs of users and collect their comments for better operating system; the other is Supercomputer User's Meeting where users can exchange useful information each other and get information or lecture on new system and service and so on. The latter is to be held whenever new useful information comes. Daily consultation by the system engineers also contributes to better communication.

Workshop is organized once a year, where about ten selective research progresses of the year are presented, to offer an opportunity for communication among users and the dissemination and discussion on the obtained results with scientists of the global environment area.

The system has been operated quite stably from the beginning. The CPU time and memory have been occupied entirely in the duration of April 1992 to March 1993, which indicates that the needs of researchers to use the facility is very high and managerial operation, including communication between users and managers, has been carried out smoothly. In this duration, users from National Research Institutes and Universities fully utilized the system. About 60% of CPU time has been used by researchers to develop climate modeling, including an atmospheric-ocean coupled General Circulation Model being developed by the Meteorology Research Institute, the result of which can be one of the valuable contribution of Japan to international scientific world.

This report summarizes all of the works accomplished by our facility. We hope that it contribute to further progress of global change research and efforts for global environmental conservation.

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