

An Emerging Collaboratory for Climate Research

Understanding the Earth's climate system and how it might be changing is a preeminent scientific challenge. Climate research is a global endeavor and one that requires collaboration on a variety of fronts: scientific research and assessment, model and algorithm development, analysis and visualization, and terascale data management and sharing.

DOE's NC program has made substantial investments that have had a profound positive impact on this important area of science. The Earth System Grid (ESG) project is focused upon the critical challenge of dealing with very large distributed simulation datasets. It has developed new data management and access systems that provide access to catalogs and data associated with the past six years of joint DOE/NSF climate modeling experiments using the Community Climate System Model (CCSM) and the Parallel Climate Model (PCM). Over a hundred registered users now have ready access to nearly fifty terabytes of scientific data spread across a number of supercomputer sites. In addition, the AccessGrid (AG) now figures prominently into the regular collaborative activities of this community. ESG holds its weekly meetings via the AccessGrid along with periodic conferences with colleagues and collaborators in related areas of technology development. The CCSM Scientific Steering Committee and Software Engineering Team also use the AG on a regular basis. These early successes mark the beginnings of a Collaboratory for Climate Research.