

SOUSEI Program for global change projection: results and future development

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The Program for Risk Information on Climate Change (SOUSEI) is a national project for projection of global change, with an aim to generate information to evaluate the probability of the occurrence of extreme events and the risk of various disasters, damage, etc., and to play a role in risk management. This project began in FY2012 and will continue for five years. The project's specific research is divided into five themes which are being pursued concurrently, as follow. Theme A: Prediction and diagnosis of imminent global climate change, Theme B: Climate change projection contributing to stabilization target setting, Theme C: Development of basic technology for risk information on climate change, Theme D: Precise impact assessments on climate change, and Theme E: Promotion for climate change research and linkage coordination. Theme A focuses on the development of the basic model that is the basis of this program. In this program's precursor, the Innovative Program of Climate Change Projection for the 21st Century, research on the basic model was also driving the overall program, but in the current program, we aim to strengthen the basic model itself and to add more advanced functions. Theme B has a sibling relationship with Theme A. It adds elements such as the environmental biogeochemical cycles and biological activity to the basic model, develops a more detailed earth system model, and studies target levels for stabilization of the climate. The aim of Theme C is to extract more detailed prediction information and to describe the "conceivable scenario" including the probability of a particular scenario occurring, such as Isewan Typhoon (Typhoon Vera). In response, Theme D aims to produce risk projections and assessments to provide adaptation to minimize the impact to natural hazards, water resources and ecosystem and biodiversity under climate change. Theme E is unique in that it is dedicated to supporting other research themes (Theme A-D) including technical issues, such as establishment and maintenance of data storage server with ~3PB data space. Theme E is also expected to link SOUSEI Program with another IT project in Japan, i.e., Data Integration and Analysis System (DIAS), which in turn is serving as the Japan Node for the Earth System Grid. In the presentation, results obtained so far under SOUSEI Program and ongoing coordination in Japan regarding preparation for CMIP6 will be reported for both scientific and technological aspects.

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