

Preface

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The Climate System Model Development and Application Studies (CSMDA for short) is an International Partnership Program for Creative Research Teams that was started in October 2004 and is supported by the Chinese Academy of Sciences (CAS). The initial objectives are “to develop a sustainable climate system model that can represent the interaction of different spheres in the climate system, to provide a cross-cut research platform for atmospheric sciences, oceanography and other related fields, and to offer theoretical support for developing and improving reasonable short-range climate prediction systems”.

The development of a climate system model is a typical multi-disciplinary cross-cut program which requires not only long term persistent efforts and experience, but also engineering-like management and collaboration. CSMDA has taken brave steps in both aspects. Strenuous efforts have been made over the past four years resulting in significant advancement in the development and application of Institute of Atmospheric Physics (IAP) climate system models. Meanwhile, young scientists have been well trained through their involvement in the project. Still, we are fully aware of our deficiencies and are working to better our team in these areas. In the real world, the climate system model has become an important platform for integrating related earth sciences, and the standard of the climate system model development, to some extent, reflects the synthetic level of a country’s earth sciences studies. In the past years, the western countries have achieved unprecedented progress in climate system model development, and the gap of model development between China and western countries tends to grow. Four years is not a sufficient timeframe in which to successfully promote climate system model development and application in China. Moreover, with our growing understanding of the physical processes, the room for developing climate system models is growing. We never stop asking—what is the next unknown parameter?

As a project supported by the International Partnership Program, the significance of CSMDA might lie in the fact that CSMDA provides an essential international collaborative platform for climate system model development in China. Chinese members and overseas members have sufficient scientific exchange and cooperation through the project. The internationally advanced products were imported and digested to develop our own climate system model which incorporates regional East Asian features. The solid foundation for future long-term cooperation has been established and we hope that this effective collaborative mechanism can be maintained and strengthened over time. We highly appreciate the joint efforts by Chinese and overseas team members!

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