Argonne plays key role in new climate simulations（图）

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[摘要]ARGONNE, Ill. (Feb. 15, 2007) ?The Model Coupling Toolkit created by the U.S. Department of Energy's Argonne National Laboratory played a key role in the climate simulations used to prepare the new U.N. report "Climate Change 2007: The Physical Science Basis."
[关键词]Climate Change;Physical Science

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The Model Coupling Toolkit created by the U.S. Department of Energy's Argonne National Laboratory played a key role in the climate simulations used to prepare the new U.N. report "Climate Change 2007: The Physical Science Basis."

The report, a summary of which was issued February 2, issued by the Intergovernmental Panel on Climate Change, presents a comprehensive assessment of the world's knowledge about climate change and its potential impacts on society.

In preparing the report, summary and the full report, to be issued in May, scientists used climate models from all over the world to perform simulations of how climate has changed over the past century and how it might change in the future. The Model Coupling Toolkit (MCT) enabled researchers to "couple" into a single system the numerous individual models used in the Community Climate S

The CCSM is a fully coupled global climate model that provides state-of-the-

art computer simulations of the Earth's past, present and future climate states. The MCT is an open source software library for constructing parallel coupled models from individual parallel models. MCT is designed for high performance and portability.

All the CCSM simulations used the MCT.

"Such coupling allows many different models of sea, air, land and ice to function as one integrated climate model," said Robert Jacob, a computational scientist in Argonne's Mathematics and Computer Science Division. "This is a very complex model of the Earth's climate and is used to predict climate change, leading to more detailed and accurate predictions of future climate."

"The capabilities provided by MCT were essential for the successful application of CCSM in this major international climate assessment," said Bill Collins, a scientist at the National Center for Atmospheric Research and a contributing author to the climate change report.

The report, the fourth in a series, presents new projections of future global climate, as well as analysis of greenhouse gases and other factors driving climate change. It will be complemented by two other reports to be released this spring, one focusing on impacts and one on mitigation measures.

"I'm proud of the role MCT played in these latest simulations," said Jacob. "We are already enhancing the toolkit to perform higher-

resolution simulations in support of the next report, due out in 2013."

The nation's first national laboratory, Argonne National Laboratory conducts basic and applied scientific research across a wide spectrum of disciplines, ranging from high

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energy physics to climatology and biotechnology. Since 1990, Argonne has worked with more than 600 companies and numerous federal agencies and other organizations to help advance America's scientific leadership and prepare the nation for the future. Argonne is managed by UChicago Argonne, LLC for the U.S. Department of Energy's Office of Science.

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