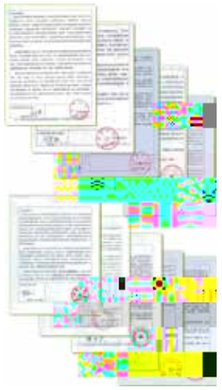
Institute of Software, Chinese Academy of Sciences



xMath “ • ”

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The xMath library has promoted various important applications on Sunway

With high influence in China's high-performance computing (HPC), this research group has been devoting to the R&D of software for domestic supercomputers such as Sugon, Lenovo, Sunway and Tianhe during the past two decades. To tackle with the major challenges of HPC, they developed a new generation of high-performance algorithm library on Sunway TaihuLight, and successfully promoted a number of important applications in China. The group also designed a series of novel domain-decomposition algorithms for large-scale heterogeneous environments, and managed to make Tianhe-2 the world's No. 1 place in the HPCG List. Particularly in 2016, because of the major breakthroughs they made in the design of 10-millon-core scalable fully implicit solvers, the group won the ACM Gordon Bell Prize, which is the first time that China has won this high honor in its 29-year history. This achievement is seen as not only a landmark breakthrough in China's HPC development but also an irreplaceable contribution to world's recognition of China's global leadership in HPC.

Outstanding contributors of this research group

Yang Chao

10-million-core scalable fully implicit algorithm and led the R&D of the new

Sun Jiachang

As a founder and pioneer of parallel computing in China, he has made great contributions to the development of high-performance software, the cultivation of students and talents, and the combination of mathematics, computers and

2016 “ . ”

Li Yucheng

Sun Qiao

Wu Changmao

Zhao Yuwen

Zhang Xianyi

Li Leisheng

Wei Ying

Zhao Haitao

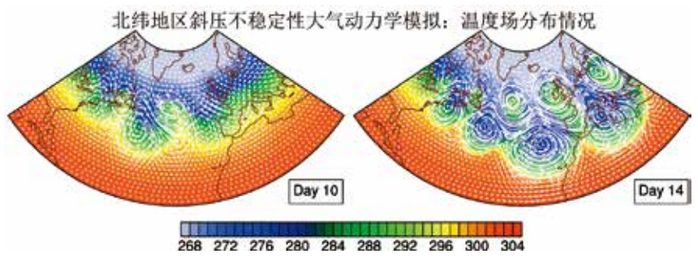
Zhang Ya

Zhao Hui

xMath .

User's manual for the new generation high-performance

2014 11 “ 2 ” HPCG



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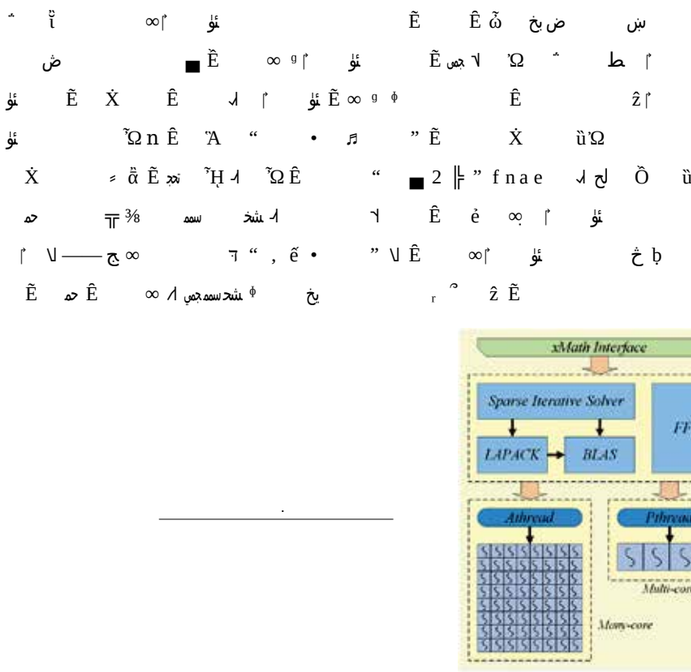
The 10m-core scalable fully implicit solver can substantially improve the simulation

2016 11 17 SC

2016 “ . ”

国产P/E级高性能软件与算法库研究集体

研究集体主要科技贡献：



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xMath “ • ”

SW26010 .

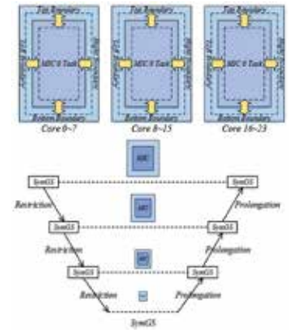
The xMath library fully supports the domestic SW26010 many-core processor,

研究集体突出贡献者

Yang Chao

研究集体主要完成者

Sun Jiachang



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Schematic of the heterogeneous domain