

# Communications in Computational Physics

Volume 4, Issue 1, July 2008

Papers also published electronically

<http://www.global-sci.com>

---

**Editor-in-Chief:**

Xian-Tu He *Institute of Applied Physics and Computational Mathematics (IAPCM)  
Beijing*

**Managing Editors:**

Longjun Shen *IAPCM, Beijing*

Tao Tang *Hong Kong Baptist University*

**Associate Editors:**

Joan Adler

George Karniadakis

Eitan Tadmor

Gang Bao

Boo-Cheong Khoo

Lei-han Tang

John Boyd

David P. Landau

Roger Temam

Wei Cai

Bo Li

Michel A. Van Hove

Shiyi Chen

Haiqing Lin

Bin Wang

Weng Cho Chew

Zhihong Lin

Dingsheng Wang

Weinan E

Stanley Osher

Xiaoqun Wang

Xingao Gong

Jie Shen

Kun Xu

Jan S. Hesthaven

Chi-Wang Shu

Takashi Yabe

Lianjie Huang

Dietrich Stauffer

Pingwen Zhang

Song Jiang

Sauro Succi

Yao Zheng



# Communications in Computational Physics

## *Editor-in-Chief:*

**Xian-Tu He**

Institute of Applied Physics and  
Computational Mathematics,  
Beijing 100088, China

## *Managing Editors:*

**Longjun Shen**

Institute of Applied Physics and  
Computational Mathematics,  
Beijing 100088, China

**Tao Tang**

Department of Mathematics, Hong  
Kong Baptist University, Kowloon  
Tong, Hong Kong

## *Associate Editors:*

**Joan Adler**

Department of Physics, Technion, Haifa  
32000, Israel

**Gang Bao**

Department of Mathematics, Michigan  
State University, East Lansing, MI 48824-  
1027, USA

**John Boyd**

Department of Atmospheric, Oceanic and  
Space Sciences, University of Michigan,  
Ann Arbor, MI 48109, USA

**Wei Cai**

Department of Mathematics, University  
of North Carolina at Charlotte, Charlotte,  
NC 28223, USA

**Shiyi Chen**

Department of Mechanical Engineering,  
The Johns Hopkins University, MD  
21218, USA

**Weng Cho Chew**

Department of Electrical and Electronic  
Engineering, The University of Hong  
Kong, Pokfulam Road, Hong Kong

**Weinan E**

Program in Applied & Computational  
Mathematics, Princeton University,  
Princeton, NJ 08544-1000, USA

**Xingao Gong**

Department of Physics, Fudan University,  
Shanghai, China

**Jan S. Hesthaven**

Division of Applied Mathematics, Brown  
University, Providence, RI 02912, USA

**Lianjie Huang**

Mail Stop D443, Los Alamos National  
Laboratory, Los Alamos, NM 87545, USA

**Song Jiang**

Institute of Applied Physics and  
Computational Mathematics, Beijing  
100088, China

**Yipeng Jiang**

Shanghai Astronomical Observatory,  
Chinese Academy of Sciences,  
Shanghai 200030, China

**George Karniadakis**

Division of Applied Mathematics,  
Brown University, Providence RI  
02912, USA

**Boo-Cheong Khoo**

Department of Mechanical &  
Production Engineering, National Univ.  
of Singapore, Singapore

**David P. Landau**

Department of Physics and Astronomy,  
The University of Georgia, GA 30602-  
2451, USA

**Bo Li**

Department of Mathematics, University  
of California, San Diego, CA 92093-  
0112, USA

**Haiqing Lin**

Department of Physics, The Chinese  
University of Hong Kong, Shatin, Hong  
Kong

**Zhihong Lin**

Department of Physics and Astronomy,  
University of California, Irvine, USA

**Stanley Osher**

Department of Mathematics, University  
of California, Los Angeles, CA 90095-  
1555, USA

**Jie Shen**

Department of Mathematics, Purdue  
University, West Lafayette, IN 47907-  
2067, USA

**Chi-Wang Shu**

Division of Applied Mathematics,  
Brown University, Providence, RI  
02912, USA

**Dietrich Stauffer**

Department of Theoretical Physics,  
University of Cologne, Cologne,  
Germany

**Sauro Succi**

Istituto per le Applicazioni del  
Calcolo "Mauro Picone" del C.N.R.,  
Viale del Policlinico 137, Italy

**Eitan Tadmor**

Center for Scientific Computation &  
Mathematical Modeling, University  
of Maryland, MD20742-2389, USA

**Lei-han Tang**

Department of Physics, Hong Kong  
Baptist University, Kowloon Tong,  
Hong Kong

**Roger Temam**

Institute for Scientific Computing &  
Applied Mathematics, Indiana  
University, Bloomington, USA

**Michel A. Van Hove**

Department of Physics and Materials  
Science, City University of Hong  
Kong, Hong Kong

**Bin Wang**

LASG, Institute of Atmospheric  
Physics, Chinese Academy of  
Sciences, Beijing 100029, China

**Dingsheng Wang**

Institute of Physics, Chinese  
Academy of Sciences, Beijing  
100080, China

**Xiaoqun Wang**

Department of Physics, Renmin  
University of China, Beijing, China

**Kun Xu**

Department of Mathematics, The  
Hong Kong University of Science &  
Technology, Kowloon, Hong Kong

**Takashi Yabe**

Department of Mechanical  
Engineering & Science, Tokyo  
Institute of Technology, Japan

**Pingwen Zhang**

School of Mathematical Sciences,  
Peking University, Beijing 100871,  
China

**Yao Zheng**

Center for Engineering & Scientific  
Computation, Zhejiang University,  
Zhejiang 310027, China