The Rapid Evaluation of Potential Fields in Particle Systems



Filesize: 1.28 MB

Reviews

A fresh e book with an all new viewpoint. It is really simplistic but unexpected situations in the 50 % from the book. Once you begin to read the book, it is extremely difficult to leave it before concluding. (Dawn Hane)

THE RAPID EVALUATION OF POTENTIAL FIELDS IN PARTICLE SYSTEMS



MIT Press Ltd, United States, 2003. Paperback. Book Condition: New. 274 x 212 mm. Language: English . Brand New Book. The Rapid Evaluation of Potential Fields in Particle Systems presents a group of algorithms for the computation of the potential and force fields in large-scale systems of particles that are likely to revolutionize a whole class of computer applications in science and engineering. In many areas of scientific computing, from studying the evolution of galaxies, to simulating the behavior of plasmas and fluids, to modelling chemical systems, a numerical scheme is used to follow the trajectories of a collection of particles moving in accordance with Newton's second law of motion in a field generated by the whole ensemble. Extending the earlier work of Rokhlin, Greengard has developed general, numerically stable methods for evaluating all pairwise interactions in linear time, a great improvement over the quadratic time required by the naive approach, and significantly better than any other proposed alternative. The Rokhlin-Greengard algorithm promises to make previously prohibitive simulations feasible, with speedups of three to four orders of magnitude in a system of a million particles. Moreover, the algorithm is well-suited for vector and parallel machines, and should make full use of their capabilities. The author presents his work with great clarity, and demonstrates the superiority of his methods both by mathematical analysis and by the results of numerical experiments.Leslie Greengard received his doctorate from Yale University where he is a NSF Postdoctoral Fellow in the Computer Science Department. The Rapid Evaluation of Potential Fields in Particle Systems is a 1987 ACM Distinguished Dissertation.



Read The Rapid Evaluation of Potential Fields in Particle Systems Online Download PDF The Rapid Evaluation of Potential Fields in Particle Systems

Related eBooks



THE Key to My Children Series: Evan s Eyebrows Say Yes

AUTHORHOUSE, United States, 2006. Paperback. Book Condition: New. 274 x 216 mm. Language: English . Brand New Book ***** Print on Demand *****.THE KEY TO MY CHILDREN SERIES: EVAN S EYEBROWS SAY YES is about...

Save eBook »



The Preschool Inclusion Toolbox: How to Build and Lead a High-Quality Program

Brookes Publishing Co, United States, 2015. Paperback. Book Condition: New. 274 x 213 mm. Language: English . Brand New Book. Filled with tips, tools, and strategies, this book is the comprehensive, practical toolbox preschool administrators...

Save eBook »



The First Epistle of H. N. a Crying-Voyce of the Holye Spirit of Loue. Translated Out of Base-Almayne Into English. (1574)

Eebo Editions, Proquest, United States, 2010. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****. EARLY HISTORY OF RELIGION. Imagine holding history in your hands. Now...

Save eBook »



Oxford Phonics Spelling Dictionary

Oxford University Press, United Kingdom, 2013. Paperback. Book Condition: New. 274 \times 218 mm. Language: English . Brand New Book. The Oxford Phonics Spelling Dictionary is an easy home and school reference tool. It supports...

Save eBook »



Violin Concerto, Op.82: Study Score

Petrucci Library Press, United States, 2014. Paperback. Book Condition: New. Urtext ed.. 274 x 213 mm. Language: English . Brand New Book ***** Print on Demand *****. Premiered by the renowned violinist Leopold Auer in St....

Save eBook »