Agenda

Fifth Joint Russian-American Conference
on
Computational Mathematics

Tuesday, September 2, 1997

Presentations - Abstract Title and Author(s)

Early Morning Session

8:30 - 8:50 *Paralleling Calculations in 3D Electromagnetic Simulation Code*, G. A. Adamkevich, G. V. Baidin, I. A. Litvinenko, V. A. Rotko

8:50 - 9:10 *Parallelization Methods for Numerical Solution of 3D Group Non-Stationary Equation of Neutron Difffusion for Nuclear Power Plant Safety Calculations*, A. V. Alexeyev, O. A. Zvenigorodskaya, R. M. Shagaliyev

9:10 - 9:30 *Methods for Improving Accuracy of the First-Order Approximation Scheme for Solving Systems of Equations for Radiation Transfer*, E. S. Andreyev, V. Yu. Gusev, M. Yu. Kozmanov

9:30 - 9:50 *A Technique for Radiation Transfer Computation With Account of Anisotropic Emission of Boundary Surface*, S. V. Bazhenov, P. I. Pevnaya

9:50 - 10:10 BREAK

Late Morning Session

10:10 - 10:30 *Numerical Simulation in Diffusive-Vacuum Approximation of Radiant Energy Transfer in Thermonuclear Targets*, A. A. Bazin, V. V. Vatulin, Yu. A. Dementyev, V. F. Mironova, G. I. Skidan, E. N. Tikhomirova, B. P. Tikhomirov

10:30 - 10:50 *Computational Simulation of Non-Equilibrium Processes During Thermonuclear Fusion*, I. M. Belyakov, S. A. Belkov, V. V. Vatulin, L. L. Vakhlamova, O. A. Vinokurov, S. G. Garanin, V. F. Yermolovich, N. P. Pleteneva, G. N. Remizov, V. Yu. Rezchikov, N. A. Ryabikina, I. D. Sofronov, L. P. Fedotova, R. M. Shagaliyev

10:50 - 11:10 *Elimination of Artificial Grid Distortion and Hourglass-Type Motions by Means of Lagrangian Subzonal Masses and Pressures*, E. J. Caramana, M. J. Shashkov

11:10 - 11:30 *Parallel Deterministic Neutronics with AMR in 3D*, C. Clouse, J. Ferguson, C. Hendrickson

11:30 - 1:00 LUNCH

Early Afternoon Session

1:00 - 1:20 *Source Description and Sampling Techniques used in PEREGRINE Monte Carlo Calculations of Dose Distributions for Radiation Oncology*, L. J. Cox, P. M. Bergstrom, Jr., W. P. Chandler, S. M. Hornstein, A. E. Schach von Wittenau, C. L. Hartmann Siantar

1:20 - 1:40 *The Moving-Least-Squares-Particle Hydrodynamics Method (MLSPH)*, G. Dilts

1:40 - 2:00 *Monte-Carlo Simulation of Biological Protection at Repetitive Pulse Electron Accelerator*, Ia. Z. Kandiev, V. V. Plokhoy

2:00 - 2:20 *The Energetic Alpha Particle Transport Method (EATM)*, R. C. Kirkpatrick

2:20 - 2:40 BREAK

Agenda

Tuesday - (Continued)

Late Afternoon Session

2:40 - 3:00	*Time Dependent View Factor Methods*, R. C. Kirkpatrick
3:00 - 3:20	*Implementation of Numerical Simulation Techniques in Analysis of the Accidents in Complex Technological Systems*, G. S. Klishin, V. E. Seleznev, V. V. Aleoshin
3:20 - 3:40	*3D Unstructured-Mesh Radiation Transport Codes*, J. Morel
3:40 - 4:00	*Boundary Acquisition for Setup of Numerical Simulation*, C. Diegert
4:00 - 4:20	*An Analytically Solvable Problem for A Sliding Interface*, J. Pepin and J. E. Hammerberg
4:20 - 4:30	Wrap-up/Discussion
6:30 – 9:00	RECEPTION – GRUET WINERY

Wednesday, September 3, 1997

Presentations - Abstract Title and Author(s)

Early Morning Session

8:30 - 8:50	*Three Dimensional Finite Element Formulation For Thermoviscoelastic Orthotropic Media*, M. A. Zocher
8:50 - 9:10	*Computational Modeling of Joint U. S. - Russian Experiments Relevant to Magnetic Compression/Magnetized Target Fusion (MAGO/MTF)*, P. T. Sheehey, R. J. Faehl, R. C. Kirkpatrick, I. R. Lindemuth
9:10 - 9:30	*ALEGRA--A Massively Parallel H-Adaptive Code for Solid Dynamics*, R. M. Summers, M. K. Wong, E. A. Boucheron, J. R. Weatherby
9:30 - 9:50	*Application of CHAD Hydrodynamics to Shock-Wave Problems*, H. E. Trease, P. J. O'Rourke, M. S. Sahota
9:50 - 10:10	BREAK

Late Morning Session

10:10 - 10:30	*Nonregular Free-Langrangian "Medusa" Technique*, S. G. Volkov, B. M. Zhogov, V. D. Malshakov, I. D. Sofronov
10:30 - 10:50	*Numerical Simulation of Close and Remote Zones of Accident Outburst and Explosion*, Yu. V. Yanilkin, V. N. Sofronov, V. I. Tarasov, V. P. Statsenko, V. N. Piskunov, N. P. Kovalyov, O. A. Dibirov, A. L. Stadnik, T. A. Toropova, G. G. Ivanova, A. A. Shanin
10:50 - 11:10	*Variational Difference Flow-Type Scheme for 3D Diffusion Equation on Grids of Arbitrary Hexahedrons*, S. V. Bazhenov, S. P. Belyayev, Yu. A. Bondarenko, V. V. Gorev, T. V. Korol'kova, P. I. Pevnaya
11:10 - 11:30	*Hexahedral Mesh Generation Via the Dual Arrangement of Surfaces*, S. A. Mitchell, T. J. Tautges
11:30 - 1:00	LUNCH

Early Afternoon Session

1:00 - 1:20	*Numerical Preservation of Symmetry Properties of Continuum Problems*, E. J. Caramana, P. Whalen
1:20 - 1:40	*A New 2-d, Limited, Zone-Centered Artificial Viscosity Tensor*, M. R. Clover, C. W. Cranfill
1:40 - 2:00	*Solving the Transport Equation with Quadratic Finite Elements: Theory and Applications*, J. M. Ferguson
2:00 - 2:20	*Modeling By Value Implemented in Prizma Code*, Ia. Z. Kandiev, G. N. Malyshkin
2:20 - 2:40	BREAK

Agenda

Wednesday – (Continued)

Late Afternoon Session

2:40 - 3:00	*An 8-Node Tetrahedral Finite Element Suitable For Explicit Transient Dynamic Simulations*, S. W. Key, M. W. Heinstein, C. M. Stone
3:00 - 3:20	*MPDATA: A Positive Definite Solver for Geophysical Flows*, P. K. Smolarkiewicz, L. G. Margolin
3:20 - 3:40	*Load Balancing of Parallel Computations*, Robert W. Leland, Bruce Hendrickson, Karen Devine
3:40 - 4:00	*Numerical Simulation of Turbulent Mixing in 2D Flows*, V. V. Nikiforov, Yu. V. Yanilkin, G. V. Zharova, Yu. A. Yudin
4:00 - 4:20	*Analytical and Numerical Study of Accelerated Thin Layer Instability*, S. M. Bakhrah, G. P. Simonov
4:20 - 4:30	Wrap-up/Discussion
	DINNER - OPEN

Thursday, September 4, 1997

Presentations - Abstract Title and Author(s)

Early Morning Session

8:30 - 8:50	*Calculation Technique for 3-D Gas Dynamics Problems on Nonregular Lagrangian Grids*, V. V. Rasskazova
8:50 - 9:10	*3-D Parallel Program for Numerical Calculation of Gas Dynamics Problems with Heat Conductivity on Distributed Memory Computational Systems (CS)*, I. D. Sofronov, B. L. Voronin, O. I. Butnev, A. N. Bykov, A. M. Yerofeyev, A. I. Skripnik, D. Nielsen, Jr., N. Medsen, R. Evans, S. Brandon
9:10 - 9:30	*Mathematical Methods for Protein Science*, W. Hart, S. Istrail, J. Atkins
9:30 - 9:50	*Development of Difference Schemes for Computing Multidimensional Non-Stationary Elastic-Plastic Flows on the Base of the Mutual Transition Law for Kinetic and Internal Energies*, V. B. Vershinin, V. I. Delov, O. V. Senilova, I. D. Sofronov
9:50 - 10:10	BREAK

Late Morning Session

10:10 - 10:30	*Molecular Dynamics Modeling of Solidification in Medals*, D. B. Boercker, J. Belak, J. Glosli
10:30 - 10:50	*Quantum Molecular Dynamics Simulations of Dense Matter*, L. Collins, J. Kress, N. Troullier, T. Lenosky, I. Kwon
10:50 - 11:10	*Simulation of Thermomechanical Fatigue in Solder Joints*, H. E. Fang, V. L. Porter, R. M. Fye, E. A. Holm
11:10 - 11:30	*Computation Technique for Elastic-Plastic Flows with Account of Material Destruction and Fragmentation*, A. V. Gorodnichev, G. P. Siminov, Yu. V. Yanilkin
11:30 - 1:00	LUNCH

Agenda

Thursday – (Continued)

Presentations - Abstract Title and Author(s)

Early Afternoon Session

1:00 - 1:20	*Recent Work on Material Interface Reconstruction*, S. J. Mosso, B. K. Swartz
1:20 - 1:40	*Molecular Dynamics Computer Simulation of Permeation in Solids*, P. I. Pohl, G. S. Heffelfinger, D. K. Fisler, D. M. Ford
1:40 - 2:00	*An Implicit Fast Fourier Transform Method for Integration of the Time Dependent Schrodinger Equation*, M. E. Riley, A. B. Ritchie
2:00 - 2:20	*Efficient Single Scatter Electron Monte Carlo Simulation*, M. Svatos, J. Rathkopf
2:20 - 2:40	BREAK

Late Afternoon Session

2:40 - 3:00	*Transverse Isotropic Modeling of the Ballistic Response of Glass Reinforced Plastic Composites*, P. A. Taylor
3:00 - 3:20	*Spallation Studies on Shock Loaded Uranium*, D. L. Tonks, R. Hixson, R. L. Gustavsen, J. E. Vorthman, A. Kelly, A. K. Zurek, W. R. Thissell
3:20 - 3:40	*Propagation of an Ultra-short, Intense Laser in a Relativistic Fluid*, A. B. Ritchie, C. D. Decker
3:40 - 4:00	*A Transport Model for Computer Simulation of Wildfires*, R. Linn, F. Harlow
4:00 - 4:20	*Experiences with Electromagnetic Particle-in-Cell Simulation on the Teraflop Computer*, Mark L. Kiefer
4:20 - 4:30	Wrap-up/Discussion
6:30 – 9:00	SOCIAL EVENING – TOWN PARK CLUB HOUSE

Friday, September 5, 1997

Presentations - Abstract Title and Author(s)

Early Morning Session

8:30 - 8:50	*Molecular Dynamics of Shock Loading of Metals with Defects*, J. F. Belak
8:50 - 9:10	*Solution of Large Nonlinear Quasistatic Structural Mechanics Problems on Distributed-Memory Multiprocessor Computers*, M. Blanford
9:10 - 9:30	*Providing Scalable System Software for High-End Simulations*, D. Greenberg
9:30 - 9:50	*Architecture of a Multicomputer's Commutation Network and of Difference Grid for Computational Physics Problems*, I. D. Sofronov
9:50 - 10:10	BREAK

Late Morning Session

10:10 - 10:30	*Establishing Confidence in Complex Physics Codes: Art or Science?*, T. Trucano
10:30 - 10:50	*Explosive Deceleration and Fragmentation of Meteorites in the Atmosphere*, V. P. Elsukov, D. V. Petrov, V. A. Simonenko, O. N. Shubin
10:50 - 11:10	*Numerical Simulation of Experiments with Fuel Pellets at Pulse Reactor Facility*, Ia. Z. Kandiev, R. M. Kozybayev
11:10 - 11:30	*Seismic Imaging using Finite-Differences and Parallel Computers*, C. C. Ober
11:30 – 12:00	Wrap-up/Discussion