

# TECHNICAL SESSIONS

Parallel CFD 2005

<b>Tuesday May24</b>	
<b>ROOM A (2100)</b>	
<b>Turbulence I 10:35-12:15</b>	
1	Xu, Jin -- <i>Investigation of different parallel models for DNS of turbulent channel flow</i>
2	Frederich, O; Wassen, E.; Thiele, F. -- <i>Flow Simulation around a Finite Cylinder on Massively Parallel Computer Architecture</i>
3	Woodward, Paul R.; Porter, David A.; Anderson, Sarah E.; Edgar, B. Kevin; Puthenveetil, Amitkumar; Fuchs, Tyler -- <i>Parallel Computation of Turbulent Fluid Flows with the Piecewise-Parabolic Method</i>
4	Balaras, Elias; Yang, Jianming -- <i>Parallel Large-Eddy Simulations of Turbulent Flows with Complex Moving Boundaries on Fixed Cartesian Grids</i>
<b>Software Frameworks and Component Architectures I 2:30-3:45</b>	
1	Rasmussen, Craig E.; Sottile, Matthew J.; Rickett, Christopher D. -- <i>A Gentle Migration Path to Component-Based Programming</i>
2	Tobis, Michael -- <i>PyNSol: A Framework for Interactive Development of High Performance Continuum Models</i>
3	Collins, Nancy; Theurich, Gerhard; DeLuca, Cecelia; Suarez, Max; Balaji, V.; Trayanov, Atanas; Li, Peggy; Yang, Weiyu; Hill, Chris; daSilva, Arlindo -- <i>ESMF Components in Climate Modeling</i>
<b>Multiphysics and MHD 4:00-6:05</b>	
1	Li, Ding; Xia, Guoping; Merkle, Charles L. -- <i>Large-Scale Multidisciplinary Computational Physics Simulations using Parallel Multi-physics Zone Methods</i>
2	Xu, Ying; McDonough, J.M; Tagavi, K.A. -- <i>Parallelization of Phase-field Model for Phase Transformation Problems in a Flow Field</i>
3	Lee, D.; Deane, A. -- <i>An Unsplit Staggared Mesh Algorithm for MHD</i>
4	Gasilov, V.A.; D'yachenko, S.V.; Olkhovskaya, O.G.; Diyanov, O.V.; Kotegov, S.V. -- <i>Coupled magnetogasdynamics -- radiative transfer parallel computing using unstructured meshes</i>
5	Balbas, Jorge -- <i>MHD Equations, the divB=0 constraint, and Central Schemes</i>
<b>ROOM B (2110)</b>	
<b>Grid Computing 10:35-12:15</b>	
1	Garbey, M.; Ltaief, H. -- <i>On a Fault Tolerant Algorithm for a Parallel CFD Application</i>
2	Payli, R.U.; Akay, H.U.; Baddi, A.S.; Ecer, A.; Yilmaz, E.; Oktay, E. -- <i>Computational Fluid Dynamics Applications on TeraGrid</i>
3	Picard, Christophe; Garbey, Marc; Subramaniam, Venkat -- <i>Mapping LSE Method on a Grid: Software Architecture and Performance Gains</i>
4	Tromeur-Dervout, D.; Vassilevsky, Y. -- <i>POD Acceleration of Fully Implicit Solver for Unsteady Non-linear Flows and Its Application on Grid Architecture</i>
<b>BioFluids 2:30-3:45</b>	
1	Dimitrakopoulos, P.; Dissanayake, D. -- <i>Dynamics of biological and synthetic polymers through large-scale parallel computations</i>
2	Fischer, P.; Lee, S-W.; Lee, S., Loth, F.; Tufo, H.; Bassiouny, H. -- <i>Simulation of Turbulence in Vascular Flows</i>
3	Agarwal, R.K.; Behrens, G.R. -- <i>Multi-Scale Modeling of Hemodynamic Flows</i> <b>CANCELLED</b>
<b>Aerodynamics I 4:00-5:40</b>	
1	Sunderland, A.J.; Emerson, D.R.; Allen, C.B. -- <i>Parallel Performance of a UKAAC Helicopter on HPCx and Other Large-Scale Facilities</i>
2	Sahu, Jubaraj -- <i>Parallel Computations of Unsteady Aerodynamics and Flight Dynamics of Projectiles</i>
3	Bhowmick, S.; Kaushik, D.; McInnes, L.; Norris, B.; Raghavan, P. -- <i>Parallel Adaptive Solvers in Compressible PETSc-FUN3D Simulations</i>
4	Winter, Gabriel; Gonzalez, Begona; Galvan, Blas; Benitez, E. -- <i>Numerical Simulation of Transonic Flows by a Double Loop Flexible Evolution</i>

# TECHNICAL SESSIONS

Parallel CFD 2005

<b>Wednesday May25</b>	
<b>ROOM A (2100)</b>	<b>ROOM B (2110)</b>
<b>Software Frameworks and Component Architectures 10:35-12:15</b>	<b>Parallel Algorithms and Solvers 10:35-12:15</b>
1 Balaji, V. -- <i>The Exchange Grid: a mechanism for data exchange between Earth System components on independent grids</i>	1 Guibert, D.; Tromeur-Dervout, D. -- <i>Adaptive Parallel Extrapolation Method for Stiff ODEs Systems</i>
2 Zhou, Shujia; Balaji, V.; Cruz, Carlos; daSilva, Arlindo; Hill, Chris; Kluzek, Eric; Smithline, Shep; Tryanov, Atlnas; Yang, Weiyu -- <i>Coupling Weather and Climate Models with the EarthSystem Modeling Framework</i>	2 Steijl, R.; Nayyar, P.; Woodgate, M.A.; Badcock, K.J.; Barakos, G.N. -- <i>Application of an implicit dual-time stepping multi-block solver to 3D unsteady flows</i>
3 Cho, Kum Won; Ko, Soon-Heum; Kim, Young Gyun; Na, Jeong-su; Song, Young Duk; Kim, Chongam -- <i>CFD Analyses on Cactus PSE</i>	3 Garbey, M.; Hadri, B.; Shyy, W. -- <i>Fast Elliptic Solver for CFD Problems on the Grid of Parallel Computer</i>
4 Allan, Benjamin A.; Ray, Jaideep -- <i>The Scalability Impact of a Component-Based Software Engineering Framework on a Growing SAMR Toolkit: a Case Study</i>	4 Fabregat, Alex; Pallares, Jordi; Cuesta, Ildfonso; Grau, Francesc X. -- <i>Comparison of Parallel Performance for Pressure Correction Solvers of Incompressible Flows</i>
<b>Aerodynamics II 2:30-3:45</b>	<b>Turbulence II 2:30-3:45</b>
1 Matsuno, Kenichi; Kotani, Ryoichiro -- <i>Simulation of Flows Around Racing Motorcycle of Moto GP Class Using building-Multi-Block/Block Decomposition Method</i>	1 Trias, F.X.; Soria, M.; Oliva, A.; Perez-Segarra, C.D. -- <i>Direct Numerical Simulation of Turbulent Flows on a Low Cost PC Cluster</i>
2 Kudryashova, T.A.; Polyakov, S.V.; Kononov, A.; Sverdlin, A. -- <i>Numerical Simulation of 2D Radiative Heat Transfer for Reentry Vehicles</i>	2 Lo, Wei; Lin Chao-An -- <i>Large Eddy Simulation of turbulent Couette-Poiseuille flows in a square duct</i>
3 Wang, Jianfeng; Wu, Yizhao -- <i>Parallel Algorithms for Hypersonic Flowfield with Chemical Non-equilibrium Effects on Unstructured Hybrid Mesh</i>	3 Giammanco, R.; Buchlin, J.M. -- <i>Development of a Complete Framework for a Parallel LES Solver Based on Free and Open Source Software Targeted Towards Ease of Use and Maintainability</i>
<b>ROOM A (2100)</b>	
<b>Special Session 4:00-6:00</b>	
<b>US Federal Agency Perspectives on Future of Computing</b>	
John Grosh, DOD -- Sangtae Kim, NSF -- Mary Anne Scott, DOE	

# TECHNICAL SESSIONS

Parallel CFD 2005

## Thursday May 26

<b>ROOM A (2100)</b>		<b>ROOM B (2110)</b>	
<b>Structured AMR 9:30-10:45</b>		<b>General Fluid Dynamics I 9:30-10:45</b>	
1	Dubey, A.; et. al. -- <i>FLASH: Applications and Future</i>	1	Smirnov, A.V.; Hu, G.; Celik, I. -- <i>Embarrassingly Parallel Computations of Bubbly Wakes</i>
2	Deiterding, R. -- <i>A Cartesian Structured AMR Framework for Distributed Memory Computers</i>	2	Kramer, S.C.; Stelling, G.S. -- <i>Parallelisation of Inundation Simulations</i>
3	Olson, Kevin M. -- <i>PARAMESH: A parallel, adaptive grid tool</i>	3	Gu, X.J.; Emerson, D.R. -- <i>Numerical Modelling of Surface Tension of Microdroplets</i>
<b>Boundary Methods 11:00-12:15</b>		<b>Parallel Tools and Load Balancing 11:00-12:15</b>	
1	Garbey, M.; Paculi, F. -- <i>A MatlabMPI Parallelized Immersed Boundary Method</i>	1	Chien, S.; Giavelli, L.; Ecer, A.; Akay, H.U. -- <i>Distributed Scheduler with Dynamic Load Balancing for Heterogeneous Computers</i>
2	Wang, Jingtao; Wang, Yechun; Dimitrakopoulos, P. -- <i>Dynamics of multiphase flows via Spectral Boundary Elements and parallel computations</i>	2	Shende, Sameer; Malony, Allen D.; Morris, Alan; Parker, Steven; St. Germain, J. Davison de -- <i>Performance Evaluation of Adaptive Scientific Applications using TAU</i>
3	Kao, Kuo-Cheng; Katopodes, Nikolaos D. -- <i>Receding Boundary Method for Parallel Computation of Incompressible Flows</i>	3	McInnes, L.; Norris, B.; Veljkovic, I. -- <i>Computational Quality of Service in Parallel CFD</i>
<b>ROOM A (2100)</b>			
<b>Special Session 2:30-3:45</b>			
<b>Perspectives on Large-Scale Simulation</b>			
1	Lohner, Rainald; Yang, Chi; Cebal, Juan R.; Camelli, Fernando F.; Togashi, Fumiya; Baum, Joseph D.; Luo, Hong; Mestreau, Eric; Soto, Orlando A. -- <i>Moore's Law, the Life Cycle of Scientific Computing Codes and the Diminishing Importance of Parallel Computing</i>		
2	Keyes, David -- <i>"Letting Engineers be Engineers" and Other Goals of Scalable Solver R&amp;D</i>		
<b>ROOM A (2100)</b>		<b>ROOM B (2110)</b>	
<b>General Fluid Dynamics II 4:00-6:05</b>		<b>Combustion 4:00-5:40</b>	
1	Barba, L.A. -- <i>Numerical simulation of strained vortices with parallel vortex method</i>	1	Eggenspieler, G; Menon, S. -- <i>Parallel Numerical Simulation of Flame Extinction and Flame Lift-Off</i>
2	Abalakin, I.; Alexandrov, A.; Bobkov, V.; Kozubskaya, T. -- <i>DNS Simulation of Sound Suppression in a Resonator with Upstream Flows</i>	2	Consul, R.; Claramunt, K.; Perez-Segarra, C.D.; Oliva, A. -- <i>Numerical Simulation of Turbulent Non-Premixed Flames by a Parallel Multiblock Algorithm Using Loosely Coupled Computers</i>
3	Hamed, A.; Basu, D.; Komko, T.; Liu, Q. -- <i>Performance Characterization and Scalability analysis of a Chimera Based Parallel Navier-Stokes solver on commodity clusters</i>	3	Szasz, R.Z.; Mihaescu, M.; Fuchs, L. -- <i>Parallel Computation of the Flow and Acoustic Fields in a Gas Turbine Combustion Chamber</i>
4	Nompelis, I.; Drayna T.W.; Candler, G.V -- <i>A Parallel Unstructured Implicit Solver for Compressible Flow Simulation</i>	4	Yasar, O.; Kocas, M. -- <i>Modeling of Compressor Cycle Using KIVA-3V Techniques</i>
5	Wang, G.; Garrick, S.C. -- <i>Direct Numerical Simulation of Vapor Particle Conversion in Turbulent Flows Using a Parallel High-Order, Predictor-Corrector Navier-Stokes Solver</i>		

# TECHNICAL SESSIONS

Parallel CFD 2005

<b>Friday May 27</b>	
<b>ROOM A (2100)</b>	
<b>Discrete Methods and Particles 9:30-11:10</b>	
1	Vahala, George; Carter, Jonathan; Soe, Min; Yepez, Jeffrey; Vahala, Linda; MacNab, Angus -- <i>Performance of Lattice Boltzmann Codes for Navier-Stokes and MHD Turbulence on the Earth Simulator and Power3/4 Architectures</i>
2	Martin, Dan; Colella, Phil; Keen, Noel -- <i>An Incompressible Navier-Stokes with Particles Algorithm and Parallel Implementation</i>
3	Al-Zoubi, A.; Brenner, G. -- <i>Determination of Lubrication Characteristics of Bearings Using the Lattice Boltzmann Method</i>
4	Terai, M.; Matsuzawa, T. -- <i>MPI-OpenMP Hybrid Parallel Computation in Continuous-Velocity Lattice-Gas Model</i>
<b>Unstructured Grid Methods 11:25-12:15</b>	
1	Chetverushkin, B.N.; Gasilov, V.A.; Polyakov, S.V.; Boldarev, A.S.; Kartasheva, E.L.; Popov, I.V.; Minkin, A.S. -- <i>Unstructured Mesh Processing in Parallel CFD Project GIMM.</i>
2	Alrutz, Thomas -- <i>Investigation of the parallel performance of the unstructured DLR-TAU-Code on distributed computing systems</i>
<b>ROOM B (2110)</b>	
<b>High Order Methods and Domain Decomposition 9:30-10:45</b>	
1	St-Cyr, A.; Thomas, S.J. -- <i>High-Order Finite Element Methods for Parallel Atmospheric Modeling</i>
2	Satofuka, Nobuyuki; Nobouka, Masaki -- <i>A High-Order Method of Lines for the Shallow Water Equations on the Cubed-Sphere</i>
3	Frullone, A.; Tromeur-Dervout, D. -- <i>A New Formulation of NUFT Applied to Aitken-Schwarz DDM on Nonuniform Meshes</i>
<b>Visualization 11:00-11:50</b>	
1	Kornilina, Marina A.; Iakobovski, Mikhail V.; Krinov, Peter S.; Muravyov, Sergey V.; Nesterov, Ivan A.; Sukov, Sergey A. -- <i>Parallel visualization of CFD data on distributed systems</i>
2	Stanchev, George; Deane, Anil -- <i>A Visualization Framework for Structured AMR Data</i>