

# ThermaComp2009 - Conference Program

First International Conference on Computational Methods for Thermal Problems  
September 8-10, 2009, Napoli, Italy

Tuesday 8 September 2009

Morning

08:10-09:00	Registration		
08:30-09:00	ThermaComp 2009 Opening		
9:00-9:50	Plenary Lecture: <b>Role of experiments in the accurate numerical simulation of thermal processes</b> Speaker: <b>Yogesh Jaluria</b> , <i>Rutgers University, New Jersey, USA</i> Chairman: Oronzio Manca Venue: Sala Conferenze		
9:50-10:20	Coffee Break		
10:20-11:00	Keynote Lecture: <b>Dynamic subscales in the finite element approximation of thermally coupled incompressible flows</b> Speaker: <b>Ramon Codina</b> , <i>Universitat Politècnica de Catalunya (UPC), Spain</i> Chairman: Perumal Nithiarasu Venue: Sala Conferenze		
11:00-12:40	<b>MS:</b> Lattice Boltzmann methods for heat and mass transfer Chairman: Stefano Ubertini Venue: Sala Conferenze	<b>SS-2:</b> Conduction Convection Radiation Chairman: Carlo Nonino Venue: Aula Posillipo	<b>SS-1:</b> Numerical Methods Chairman: Carlo Meola Venue: Aula Mergellina
11:00-11:25	Invariant grids and lattice boltzmann method for combustion, <b>Chiavazzo Eliodoro, Karlin Ilya, Gorban Alexander, Boulouchos Konstantinos.</b>	Numerical analysis of laminar natural convection in isosceles triangular enclosures, <b>Kent Emin Fuad, .</b>	Application of implicit tvd scheme to simulation of separated hypersonic boundary layer stability, <b>Novikov Andrey, Egorov Ivan, Fedorov Alexander.</b>
11:25-11:50	Free surface lattice boltzmann method for hydraulic problems, <b>Biscarini Chiara, Di Francesco Silvia, Mencattini Matteo, Pizzuto Luca.</b>	Evaluation of thermal radiation modelling in tunnel fires, <b>Russo Paola, Ciambelli Paolo, Meo Maria Grazia, Vaccaro Salvatore.</b>	A multilevel lagrangian conservative scheme, <b>Grazioso Valerio, Meola Carlo, Massarotti Nicola, Scalo Carlo.</b>
11:50-12:15	Phase separation of binary fluids with dynamical temperature, <b>Tiribocchi Adriano, Gonnella Giuseppe, Lamura Antonio, Piscitelli Antonio.</b>	Radiative effects on mixed convection in a uniformly heated vertical convergent channel with a moving plate, <b>Bianco Nicola, Andreozzi Assunta, Naso Vincenzo.</b>	Numerical study of instability of high-speed boundary layers using weno and tvd schemes, <b>Soudakov Vitaly, Egorov Ivan.</b>
12:15-12:40	Lattice boltzmann simulation of flow and heat transfer in porous media, <b>Grucelski Arkadiusz, Pozorski Jacek.</b>	Immersed volume method for solving 3d natural convection, conduction and radiation of a hat-shaped disk inside an enclosure, <b>Elie Hachem, Thibaud Kloczko, Thierry Coupez.</b>	Spectral finite difference analysis in a doubly-connected region, <b>Mochimaru Yoshihiro, .</b>
12:40-13:40	Lunch		

Tuesday 8 September 2009

Afternoon

13:40-14:20	<b>Keynote Lecture: Proper Orthogonal Decomposition for Reduced Order Thermal Modeling of Complex Convective Systems</b> <b>Speaker: Yogendra Joshi, Georgia Institute of Technology, USA</b> <b>Chairman: Carlo Nonino</b> <b>Venue: Sala Conferenze</b>		
14:20-15:35	<b>MS:</b> Lattice Boltzmann methods for heat and mass <b>Chairman: Stefano Ubertini</b> <b>Venue: Sala Conferenze</b>	<b>SS-3:</b> Coupled Problems <b>Chairmen: Michela Costa</b> <b>Venue: Aula Posillipo</b>	<b>SS-1:</b> Numerical Methods <b>Chairman: Carlo Meola</b> <b>Venue: Aula Mergellina</b>
14:20-14:45	Enhanced thermal lattice boltzmann method for heat and mass transfer applications, <b>Prasianakis Nikolaos, Karlin Ilya.</b>	Quenching process simulation for ic engine cylinder heads, <b>Suffa Maik, Greif David, Srinivasen Vedanth, Wang DeMing, Kovacic Zlatko.</b>	An upwind method for incompressible flows with heat transfer, <b>Mandal Jadav Chandra, Iyer Anesh.</b>
14:45-15:10	Wall boundary conditions for pseudo-potential multiphase lattice boltzmann fluids, <b>Falcucci Giacomo, Chiappini Daniele .</b>	Cfd-assisted design of a household pellet boiler, <b>Marra Francesco Saverio, Menghini Daniela, Continillo Gaetano.</b>	Numerical computations of energy balances in thermal convection problems, <b>Tagami Daisuke, .</b>
15:10-15:35	The lattice boltzmann method in solving radiative heat transfer in a participating medium, <b>Asinari Pietro, Di Rienzo Antonio, Izquierdo Salvador, Subhash Mishra, Borchiellini Romano .</b>	Computational analysis of a heat transfer experiment including thermally induced deformations, <b>Matthias Haupt, Reinhold Niesner, Peter Horst, Burkhard Esser, Ali Guelhan.</b>	High level languages implementation and analysis of 3d n.s. solvers, <b>Meola Carlo, de Felice Giuseppe, Grazioso Valerio, Scalo Carlo.</b>
15:35-16:05 Coffee Break			
16:05-17:20	<b>MS:</b> Lattice Boltzmann methods for heat and mass <b>Chairman: Stefano Ubertini</b> <b>Venue: Sala Conferenze</b>	<b>SS-3:</b> Coupled Problems <b>Chairmen: Michela Costa</b> <b>Venue: Aula Posillipo</b>	<b>SS-9:</b> Boiling and condensation <b>Chairman: Perumal Nithiarasu</b> <b>Venue: Aula Mergellina</b>
16:05-16:30	Numerical study of natural convection in cavities using the lattice boltzmann method, <b>Florez Serrano Elkin, Clara Salueña, Jordi Pallares, Ildefonso Cuesta.</b>	Elastoplastic-damage constitutive modeling in coupled chemo-thermo-hygro-mechanical process for concrete at high temperature, <b>Li Xikui, Li Rongtao.</b>	Numerical methods of minichannel flow boiling heat transfer coefficient calculation and their modifications, <b>Poniewski Mieczyslaw, Hozejowska Sylwia, Hozejowski Leszek.</b>
16:30-16:55	Review on lattice boltzmann methods for heat transfer, <b>Frédéric Kuznik, Roux Jean-Jacques, Rusaouen Gilles .</b>	Fetch - a computational framework for complex multi-physics modelling, <b>Gomes Jefferson, Pain Christopher C., Eaton Matthew D., Goddard Tony.</b>	Simulation of two-phase flow under constant heat flux using high order methods, <b>Manavela Chiapero Ezequiel, Dorao Carlos, Fernandino Maria.</b>
16:55-17:20		A coupled approach for aerothermal mechanical modelling for turbomachinery, <b>Amirante Dario, Hills Nicholas, Barnes Christopher.</b>	

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Wednesday 9 September 2009

Morning

9:00-9:50	<b>Plenary Lecture: The Particle Finite Element Method in Thermal Problems</b> Speaker: <b>Sergio R. Idelsohn</b> , <i>International Center for Numerical Methods in Engineering (CIMNE), Spain</i> Chairman: Perumal Nithiarasu Venue: Sala Conferenze		
9:50-10:20	Coffee Break		
10:20-11:00	<b>Keynote Lecture: Simulation of Compact Heat Exchanger Performance</b> Speaker: <b>Bengt Sunden</b> , <i>Lund University, Sweden</i> Chairman: Yogendra Joshi Venue: Sala Conferenze		
11:00-12:40	<b>SS-4: Chemical and reactive processes</b> Chairman: Fabio Bozza Venue: Sala Conferenze	<b>SS-7: Heat Exchangers and Fuel Cells</b> Chairman: Nicola Massarotti, Fausto Arpino Venue: Aula Posillipo	<b>SS-1: Numerical Methods</b> Chairman: Arnaud G. Malan Venue: Aula Mergellina
11:00-11:25	Boundary condition evaluation and stability issues in swirling flame gas combustion, <b>Vondal Jiri, Hajek Jiri.</b>	Entropy generation analysis for the design optimization of solid oxide fuel cells, <b>Sciacovelli Adriano, Verda Vittorio.</b>	Pod-based reduced order dynamical model of a circulating fluidized bed combustor, <b>Continillo Gaetano, Bizon Katarzyna.</b>
11:25-11:50	Heat transfer and knock modeling in a "downsized" spark-ignition turbocharged engine, <b>Bozza Fabio, Siano Daniela, Costa Michela.</b>	A stabilized finite element algorithm for the solution of soft problems, <b>Mauro Alessandro, Massarotti Nicola, Arpino Fausto, Nithiarasu Perumal.</b>	Local collocation approach for solving turbulent thermo-fluid problems, <b>Sarler Bozidar, Vertnik Robert.</b>
11:50-12:15	Thermal profiles of a catalytic micro-burner close to the extinction point, <b>Di Benedetto Almerinda, Di Sarli Valeria, Pirone Raffaele, Russo Gennaro.</b>	Cfd-based multiobjective optimization of plate heat exchangers, <b>Koponen Tarmo, Hämäläinen Taija, Hämäläinen Jari.</b>	Immersed volume method for radiative heat transfer: theory and validation, <b>Thibaud Kloczko, Elie Hachem, Thierry Coupez.</b>
12:15-12:40	Effects of turbulence modeling for diesel engine simulation within the openfoam toolkit, <b>Aprovitola Andrea, Briani Maya, Fraioli Valentina, Migliaccio Marianna.</b>	Optimization of two phase heat exchangers, <b>Pacio Julio, Dora Carlos.</b>	Unified integral transforms in convection-diffusion: the unit code with symbolic computation, <b>Cotta Renato M., Naveira-Cotta Carolina, Sphaier Leandro, Quaresma João.</b>
12:40-13:40	Lunch		

13:40-14:20	<p>Keynote Lecture: <b>The application of numerical heat transfer methods in geological systems: novel moving boundaries and anomalous diffusion</b>                  Speaker: <b>Vaughan R. Voller</b>, <i>University of Minnesota, U.S.A.</i>                  Chairman: Nicola Massarotti                  Venue: Sala Conferenze</p>		
14:20-15:35	<p><b>MS:</b> Computational modelling of flow and heat transfer in microchannels                  Chairman: Perumal Nithiarasu, Jason Reese                  Venue: Sala Conferenze</p>	<p><b>MS:</b> Computational modeling of convection enhancement in heat exchanger design                  Chairmen: Sara Rainieri, Stefano Savino                  Venue: Aula Posillipo</p>	<p><b>SS-5:</b> Numerical methods in Energy conversion systems                  Chairman: Nicola Bianco                  Venue: Aula Mergellina</p>
14:20-14:45	<p>Thermal interaction effects in micro and nanofluid flows, <b>Asproulis Nikolaos, Drikakis Dimitris.</b></p>	<p>Numerical analysis of convective heat transfer enhancement in helical tubes, <b>Rainieri Sara, Bozzoli Fabio, Schiavi Linda, Paliarini Giorgio.</b></p>	<p>Numerical analysis of the dynamic thermal behavior of rf bipolar transistors, <b>Russo Salvatore, d'Alessandro Vincenzo, Rinaldi Niccolò, de Magistris Massimiliano, La Spina Luigi, Nanver Lis.</b></p>
14:45-15:10	<p>Numerical investigation of an electro-osmotic cooling system, <b>Eng Pey Fen, Nithiarasu Perumal.</b></p>	<p>Coupled conduction and convection in fin arrays for electronic cooling, <b>Savino Stefano, Comini Gianni.</b></p>	<p>Fem simulation of thermal behavior of a poly-si pv cell and defects characterization, <b>Falcone Ottavio, Vergura Silvano, Acciani Giuseppe.</b></p>
15:10-15:35	<p>Computational studies of effects of dimension and heat loss on methane combustion in a microchannel, <b>Li Yanxia, Feng Liang, Liu ZhongLiang, Wang JingFu.</b></p>	<p>Numerical simulation of heat transfer between forced moist air and a flat plate with water condensation, <b>Pulvirenti Beatrice, Fabbri Giampietro.</b></p>	<p>Radiative heating and joule's effect heating of a scaled pv-cell model, <b>Vergura Silvano, Acciani Giuseppe, Falcone Ottavio.</b></p>
15:35-16:05	<p>Coffee Break</p>		
16:05-17:20	<p><b>MS:</b> Computational modelling of flow and heat transfer in microchannels                  Chairman: Perumal Nithiarasu, Jason Reese                  Venue: Sala Conferenze</p>	<p><b>MS:</b> Computational modeling of convection enhancement in heat exchanger design                  Chairmen: Sara Rainieri, Stefano Savino                  Venue: Aula Posillipo</p>	<p><b>SS-8:</b> Micro- and nano- heat transport                  Chairman: Oronzio Manca                  Venue: Aula Mergellina</p>
16:05-16:30	<p>Numerical modelling of heat generated by electroosmotic flows in a t-mixer, <b>Nithiarasu Perumal, .</b></p>	<p>First numerical results on forced-convection heat transfer inside a wavy channel, <b>Niro Alfonso, Riccardo Mereu, Colombo Emanuela, Inzoli Fabio.</b></p>	<p>Transient phonon heat transport in quasi-1d nanostructures, <b>Di Stasio Stefano, Iazzetta Aniello.</b></p>
16:30-16:55	<p>A hybrid approach to the numerical analysis of cross-flow micro heat exchangers, <b>Nonino Carlo, Savino Stefano, Del Giudice Stefano.</b></p>	<p>Numerical investigation of air forced convection in channels with different shaped transverse ribs, <b>Nardini Sergio, Manca Oronzio, Picardi Giuseppe, Ricci Daniele.</b></p>	<p>Numerical study of laminar forced convection of a nanofluid in a horizontal annulus with uniform wall temperature, <b>Behzadmehr Amin, Izadi Mohsen, Jalal-Vahid Davood, Shahraki Hossian.</b></p>
16:55-17:20	<p>Heat transfer enhancement in a straight channel via transversely oscillating adiabatic circular cylinder, <b>Raisee Mehrdad, Celik Bayram, Beskok Ali.</b></p>	<p>Fluid flow and heat transfer in wavy channels with and without baffels, <b>Bahaidarah Haitham, Islam Shabaneh.</b></p>	<p>Numerical study of turbulent convection in al<sub>2</sub>o<sub>3</sub>/water nanofluid with variable properties, <b>Bianco Vincenzo, Manca Oronzio, Nardini Sergio.</b></p>
19.45	<p>Conference dinner, Villa Doria d'Angri</p>		

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Thursday 10 September 2009

Morning

9:00-9:50	<b>Plenary Lecture: Finite Element Techniques for Thermal/Fluid Problems</b> Speaker: <b>David K. Gartling</b> , Sandia National Laboratories Albuquerque, New Mexico, USA Chairman: Vincenzo Naso Venue: Sala Conferenze		
9:50-10:20	Coffee Break		
10:20-11:00	<b>Keynote Lecture: Multiscale computational modelling of flow and heat transfer</b> Speaker: <b>Dimitris Drikakis</b> , Cranfield University, U.K. Chairman: Vaughan R. Voller Venue: Sala Conferenze		
11:00-12:40	<b>MS:</b> Numerical techniques for heat and fluid flow through porous media Chairman: Fausto Arpino Venue: Sala Conferenze	<b>SS-2:</b> Conduction, Convection, Radiation Chairman: Oronzio Manca Venue: Aula Posillipo	<b>SS-1:</b> Numerical Methods Chairman: Mandal Jadav Chandra Venue: Aula Mergellina
11:00-11:25	A stability analysis for the ac-cbs algorithm for the solution of interface problems in presence of large source terms, <b>Arpino Fausto, Mauro Alessandro, Massarotti Nicola, Carotenuto Alberto</b> .	An adaptive mesh refinement strategy for the solution of 3d inverse heat conduction problems using point-wise temperature observations, <b>Heng Yi, Karalashvili Maka, Mhamdi Adel, Marquardt Wolfgang</b> .	Transport of high viscous oil in long pipelines, <b>Lindholm Dag, Sira Terje, Hu Bin, Hu Bin, Sendstad Olav, Borg Peter, Oyulvstad Steinar</b> .
11:25-11:50	Natural convection in convergent vertical channels with porous media, <b>Manca Oronzio, Buonomo Bernardo, Nardini Sergio, Tamburrino Salvatore</b> .	Inverse determination of thermal conductance for building walls, <b>Giovinco Gaspare</b> .	Sensitivity analysis of horizontal air-ground heat exchangers, <b>Congedo Paolo Maria, Bonfantini Leda, Occhilupo Simone</b> .
11:50-12:15	Darcy mixed convection in a fluid saturated square porous enclosure under multiple suction effect, <b>Murthy Krishna, Kumar Rathish, Sangwan Vivek, Nigam Mohit, Chandra Peeyush</b> .	Modelling and simulation of the natural ventilation of a transformer substation, <b>Ramos Juan Carlos, Beiza Maximiliano, Gastelurrutia Jon</b> .	Improving of parameter estimates obtained from the thermal response tests, <b>Bandos Tatyana, Montero Alvaro, Urchueguia Javier F., Fernandez de Cordoba Pedro</b> .
12:15-12:40	A geothermal downhole heat exchanger model based on an equivalent porous medium approach, <b>Mauro Alessandro, Arpino Fausto, Carotenuto Alberto, Massarotti Nicola</b> .	On the heat transfer modelling for the prediction of the human thermoregulatory response to the thermal environment, <b>Palella Boris Igor, Lopardo Gino, Riccio Giuseppe</b> .	Modelling buoyant point and line heat sources using a commercial software package – an initial investigation, <b>Farrugia Pierre-sandre, Micallef Alfred</b> .
12:40-13:40	Lunch		

