

## NumAn2010 Conference Program – Sept 14, 2010 UPDATE

### Wednesday, September 15

08:00 - 09:15 Registration  
09:15 - 09:30 Opening

#### Plenary Session

Room L2 , chair A. Hadjidimos

09:30 - 10:15 *Beauwens Robert*  
[Solving the Boltzmann equation](#)  
10:15 - 11:00 *Akrivis Georgios*  
[Galerkin and Runge-Kutta methods: Unified formulation and a posteriori error analysis](#)

11:00 - 11:30 Coffee break

#### Session W1

Room L2 , chair Y. Saridakis

11:30 - 11:50 *Mitrouli Marilena*  
[Properties of the Sylvester Hadamard matrices and their applications](#)  
11:50 - 12:10 *Chorianopoulos C., Psarrakos Panayiotis & Uhlig F.*  
[A method for the inverse numerical range problem](#)  
12:10 - 12:30 *Ongun Mevlude Yakit & Turhan I.*  
[Stability Analysis of A Model Using Non Standard Finite Difference Schemes](#)  
12:30 - 12:50 *Alanelli Maria & Hadjidimos A.*  
[Algorithms AH and AH2: On the identification of an H-matrix](#)  
12:50 - 13:10 *Sfyrakis Chrysovalantis & Mitrouli M.*  
[A parallel algorithm specifying determinants of  \$\pm 1\$  matrices](#)  
13:10 - 13:30 *Hadjidimos A., Lapidakis Michalis & Tzoumas M.*  
[Extrapolated Modulus Algorithms for the Solution of the Linear Complementarity Problem with an  \$H\_+\$ -Matrix Coefficient](#)

13:30 - 15:00 Lunch break

#### Session W2

Room L2 , chair E. Papadopoulou

15:00 - 15:20 *Chatzipantelidis Panagiotis, Lazarov R. & Thome'e V.*  
[Some error estimates for the lumped mass finite element method for a parabolic problem](#)  
15:20 - 15:40 *Dalik Josef*  
[Reduced averaging of directional derivatives in vertices of unstructured triangulations](#)  
15:40 - 16:00 *Kazolea Maria & Delis A.*  
[Well-balanced shock-capturing hybrid finite volume - finite difference schemes for Boussinesq-type models](#)

16:00 - 16:20	<i>Antonopoulou Dimitra</i> <a href="#">The Schrodinger equation in time-dependent domains: Continuous and Discontinuous Galerkin methods</a>
16:20 - 16:40	<i>Medjroubi Wided, Stoevesandt B. &amp; Peinke J.</i> <a href="#">Direct numerical simulations of plunging airfoils wakes using spectral/hp element method</a>
16:40 - 17:00	<i>Assous F. &amp; Michael Michaeli</i> <a href="#">A Variational method for stress fields calculation in nonhomogeneous cracked materials</a>

17:00 - 17:30 Coffee break

**Session W3**

Room L2 , chair *M. Mitrouli*

17:30 - 18:10	<i>Brezinski Claude</i> <a href="#">Nonlinear functional equations satisfied by orthogonal polynomials</a>
18:10 - 18:30	<i>Redivo-Zaglia Michela</i> <a href="#">Extended procedures for convergence acceleration</a>
18:30 - 18:50	<i>Simos Dimitrios &amp; Koukouvinos C.</i> <a href="#">Numerical and Algorithmic Aspects of Orthogonal Sequences in Combinatorial Design Theory</a>
18:50 - 19:10	<i>Steihaug Trond &amp; Suleiman S.</i> <a href="#">Global and linear rate of convergence of higher order methods on Powell's Singular Function</a>
19:10 - 19:30	<i>Cheimarios Nikolaos, Kokkoris G. &amp; Boudouvis A.</i> <a href="#">A fixed point iteration method for multiscale modeling of Chemical Vapor Deposition processes</a>

**Thursday, September 16**

09:15 - 09:30 Info Desk

**Plenary Session**

Room L2 , chair *I.S. Kotsireas*

09:30 - 10:15	<i>Dongarra Jack</i> <a href="#">Impact of Architecture and Technology for Extreme Scale on Software and Algorithm Design</a>
10:15 - 11:00	<i>Boudouvis Andreas</i> <a href="#">Bypassing tedious computations via numerics guided by targeted experiments: The case of a saturation mechanism investigation</a>

11:00 - 11:30 Coffee break

**Session T1**

Room L2 , chair *D. Noutsos*

11:30 - 11:50	<i>Dracopoulos Michael</i> <a href="#">A Multithreaded Finite Element Algorithm with Element-by-Element Preconditioning</a>
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11:50 - 12:10	Vassalos Paris & Noutsos D. <a href="#">Spectral equivalence between Toeplitz and Trigonometric Matrix Algebras matrices</a>
12:10 - 12:30	Mathioudakis Emmanuel, Papadopoulou E.P. & Saridakis Y.G. <a href="#">Parallel Schur Complement type iterations for Collocation linear systems</a>
12:30 - 12:50	Benis Dimitrios, Vavalis E. & Houstis E. <a href="#">LAPACK WS: Offering Lapack over the Web</a>
12:50 - 13:30	Petsounis K. <a href="#">MatLab Workshop : Parallel and Distributed computing</a>
13:30 - 15:00	Lunch break

## Session T2

	Room L2 chair P. Psarrakos	Room L0 chair M. Dracopoulos
15:00 - 15:20	Bratsos Athanassios <a href="#">A numerical scheme for the modified Burgers' equation</a>	Magoulas George <a href="#">Nonmonotone Sign-based Algorithms for Neural Networks Learning</a>
15:20 - 15:40	Muslu Gulcin M. <a href="#">An implicit finite difference scheme for focusing solutions of the generalized Davey-Stewartson system</a>	Androulakis George <a href="#">A technique for entrapping a time series' future optima</a>
15:40 - 16:00	Gorgey Annie & Chan R. <a href="#">Extrapolation of symmetrized Runge-Kutta methods</a>	Malihoutsaki Eleftheria, Androulakis G. & Grapsa T. <a href="#">A new approach for solving systems of nonlinear equations via a forecasting hybrid technique</a>
16:00 - 16:20	Ebadi Qhodrat & Rashedi S. <a href="#">Application of variational iteration method and homotopy perturbation method to the Klein-Gordon-Schrodinger equation</a>	Nikas Ioannis, Androulakis G. & Grapsa T. <a href="#">A hybrid branch and bound algorithm for bound constrained optimization</a>
16:20 - 16:40	Maleki Mohammad & Mazaheri M. <a href="#">The use of nonclassical pseudospectral method for solving nonlinear variational problems</a>	Lisgara Eleni, Karolidis G. & Androulakis G. <a href="#">A progression of the backtrack optimization technique for forecasting potential financial crisis periods</a>
16:40 - 17:00	Siraj-ul-Islam, Kosec G. and Sarler B. <a href="#">Local Meshless Method for the Numerical Solution of the Two-Dimensional Nonlinear Burger's Equations</a>	Bastani Ali Foroush and Kazemi S.M.M. <a href="#">Improved Transparent Boundary Conditions for Pricing American Options</a>
17:00 - 17:30	Coffee break	

## Session T3

	Room L2 chair G. Androulakis	Room L0 chair A. Delis
17:30 - 17:50	Nassif Nabil , Erhel J. & Karam N. <a href="#">Rescaling Systems of Ordinary Differential Equations: Control of</a>	Berenguer M., Fernandez-Munoz Maria, Garralda-Guillem A. & Ruiz Galan M. <a href="#">An numerical approximation to the</a>

17:50 - 18:10	<p><a href="#">Stiffness and Parallel-in-Time Integration</a></p> <p>Voulgaris Z. &amp; Magoulas George <a href="#">Discernibility-based Algorithms for Classification</a></p>	<p><a href="#">solution of an Fredholm integro-differential equation</a></p> <p>Mehtiyeva G.Yu., Ibrahimov R. Vagif &amp; Imanova M.N. <a href="#">The numerical solution of Volterra integral equation by the forward-jumping method</a></p>
18:10 - 18:30	<p>Morowati S. &amp; Mehri Javad <a href="#">An Extended Origin-Based Method for Solving Capacitated Traffic Assignment Problem</a></p>	<p>Majid Tavassoli &amp; Ghombavani E.S. <a href="#">Numerical solution of nonlinear fredholm integro-differential equations by Chebyshev wavelets</a></p>
18:30 - 18:50	<p>Arshad Khan &amp; Khandelwal P. <a href="#">Non-polynomial sextic spline approach for solving variable coefficient fourth-order parabolic equations</a></p>	

### Friday, September 17

09:15 - 09:30 Info Desk

#### Plenary Session

Room L2 , chair V. Dougalis

09:30 - 10:15	<p>Plemmons Robert <a href="#">Combined Reconstruction and Segmentation in Compressive Spectral Imaging</a></p>
10:15 - 11:00	<p>Makridakis Charalambos <a href="#">Adaptive methods for time-dependent PDEs</a></p>

11:00 - 11:30 Coffee break

#### Session F1

Room L2 , chair G. Akrivis

11:30 - 12:10	<p>Dougalis Vassilios <a href="#">Numerical Solution of Boussinesq Systems Modeling Two-Way Water Wave Propagation</a></p>
12:10 - 12:30	<p>Bourchtein Andrei &amp; Bourchtein L. <a href="#">On correct boundary conditions in numerical schemes for the gravity wave equations</a></p>
12:30 - 12:50	<p>Dutykh Denys, Gisclon M. &amp; Yannick M. <a href="#">Modeling and simulation of compressible two-phase flows</a></p>
12:50 - 13:10	<p>Bourchtein A. and Bourchtein Ludmila <a href="#">A semi-implicit time-splitting scheme for a regional atmospheric model</a></p>
13:10 - 13:30	<p>Mitsotakis Dimitrios, Dutykh D. and Katsaounis T. <a href="#">On some finite volume schemes applied to nonlinear dispersive wave equations</a></p>

13:30 - 15:00 Lunch break

## Session F2

### Room L2

chair *C. Christara*

### Room L0

chair *E. Mathioudakis*

15:00 - 15:20	<i>Zouraris George</i> <a href="#">Adaptive Monte Carlo Methods for SDEs</a>	<i>Muradova Alik</i> <a href="#">The time-dependent spectral method for solving equations of dynamic nonlinear elasticity</a>
15:20 - 15:40	<i>Lopez Luciano &amp; Dieci L.</i> <a href="#">Numerical Solution of discontinuous differential systems: Approaching the Discontinuity Surface from one side</a>	<i>Flouri Evaggelia, Kaligeris N., Alexandrakis G., Kampanis N. &amp; Synolakis C.</i> <a href="#">Numerical modeling of tsunami waves: Application to the simulation of specific earthquake generated tsunamis</a>
15:40 - 16:00	<i>Huckle T. &amp; Kravvaritis Christos</i> <a href="#">Compact Fourier Analysis for Multigrid methods based on block generating functions</a>	<i>Touloupoulos Ioannis</i> <a href="#">A Local Discontinuous Galerkin Scheme for the Nonlinear Parabolic -p-Laplace Type Equation</a>
16:00 - 16:20	<i>Christodoulou Evgenia, Elliotis M., Xenophontos C. &amp; Georgiou G.</i> <a href="#">The Singular Function Boundary Integral Method for 3-D Laplacian Problems with a Boundary Straight-Edge Singularity</a>	<i>Zdravkovic Nebajsa, Kojic M., Rosic M. &amp; Filipovic N.</i> <a href="#">Numerical modeling of interaction between carotid artery walls and blood</a>
16:20 - 16:40	<i>Soerevik Tor</i> <a href="#">High dimensional Interpolating Cubature rules on transformed Lattice grid</a>	<i>Rasheed Amer &amp; Belmiloudi A.</i> <a href="#">Phase-field method for computationally efficient modeling of the solidification of binary alloy with magnetic field effect</a>
16:40 - 17:00	<i>Abdi A. &amp; Hojjati Gholamreza</i> <a href="#">The construction of second derivative general linear methods for numerical solution of ODEs</a>	<i>Ali I Al Mussa</i> <a href="#">Auxiliary variational inequality principle and projection methods for MHD propulsion system</a>

17:00 - 17:30 Coffee break

### Poster Session

17:30 - 18:30	<i>Berenguer M., Garralda-Guillem A. and Ruiz Galan M.</i> <a href="#">Biorthogonal systems and numerical solution of the nonlinear Volterra integro-differential equations</a>
	<i>Carracciolo L., Casaburi D., Galletti A., D'Amore L. and Marcellino L.</i> <a href="#">Towards the development of high performance scientific software for simulating 3D fluid-dynamic processes in a viscoelastic fluid</a>
	<i>Garrappa R. and Popolizio M.</i> <a href="#">On the use of Product Integration in Fractional Differential Equations</a>
	<i>Mandikas B., Mathioudakis E., Kampanis N. and Ekaterinaris J.</i> <a href="#">High-order accurate numerical pressure correction based on Geometric MultiGrid schemes for the incompressible Navier-Stokes equations</a>
	<i>Papadomanolaki M.G. and Saridakis Y.G.</i> <a href="#">Collocation with discontinuous Hermite elements for a tumor invasion model with heterogeneous diffusion in 1+1 dimensions</a>
	<i>Saito Norikazu</i> <a href="#">Maximum-norm error estimate of the finite volume approximation for a convection-diffusion equation</a>

Saridakis Y.G. and Sifalakis A.G.  
[NAlab: A Matlab environment for studying the behavior of numerical methods in undergraduate courses](#)

18:30 - 20:00 Museum – Old Town Visit  
20:30 - 22:00 Conference Dinner

## Saturday, September 18

### Plenary Session

Room L2 , chair *M. Vrahatis*

09:15 - 10:00 *Stylianopoulos Nikos*  
[Bergman Orthogonal Polynomials: Asymptotics, Zeros and Shape Reconstruction](#)

10:00 - 10:30 *Papamichael Nikolas*  
[The Computation of Conformal Modules by Domain Decomposition](#)

10:30 - 11:00 *Kincaid David*  
[Professor David M. Young, Jr.:His Research, Career and Life](#)

11:00 -11:30 Coffee break

### Session S1

Room L2 , chair *E. Gallopoulos*

11:30 - 11:50 *Anne C. Elster*  
[The SOR as a Benchmarking Tool for Single- Multi- and Many-core Systems](#)

11:50 - 12:10 *Smoktunowicz Alicja & Smoktunowicz A.*  
[Iterative Refinement Techniques for Solving Block Linear Systems of Equations](#)

12:10 - 12:30 *Abe Kuniyoshi & Sleijpen G.*  
[A stabilized GPBiCG method with a strategy to remedy accuracy of Bi-CG coefficients for solving linear systems](#)

12:30 - 12:50 *Grzegorski Stanislaw*  
[On the convergence of the method of alternating projections for multivariate eigenvalue problem](#)

12:50 - 13:10 *Louka Maria & Missirlis N.*  
[Generalized Iterative Methods for augmented linear systems](#)

13:10 - 13:30 *Fujino Seiji, Kusakabe Y. & Onoue Y.*  
[A proposal of GS-based preconditioning applicable to restarted GMRES\(k\) method](#)

13:30 **Discussion Panel - Closing**