Workshop on Wave Phenomena in Physics and Engineering: New Models, Algorithms, and Applications

Workshop Organisers: Professor Roderick Melnik (University of Southern Denmark, rmelnik@mci.sdu.dk), Professor Alex Povitsky (Concordia University, povitsky@me.concordia.ca)

In conjunction with ICCS-2003, Montreal, Canada, May 18–21, 2003

Workshop Code WP7: 22 papers (from WP7-1 till WP7-22)

The list of accepted papers:

Paper WP7-1: **FETD Simulation of Wave Propagation Modeling the CARI Breast Sonography** by A. Bounaim, S. Holm (University of Oslo and Simula Research Lab), W. Chen, A. Odegard (Simular Research Lab), A Tveito (Simular Research Lab and University of Oslo, and K. Thomenius (GE Corporate R & D, NY). *Corresponding author:* A. Bounaim, `aichab@simula.no`

Paper WP7-2: **Finite Element Simulation of BAW Propagation in Inhomogeneous Plate Due to Piezoelectric Actuation** by A. Chakraborty, D. RoyMahapatra, and S. Gopalakrishnan (Dept of Aerospace Engineering, Indian Institute of Science, Bangalore). *Corresponding author:* D. RoyMahapatra, `dprasad@aero.iisc.ernet.in`

Paper WP7-3: **Exact Solutions of the Generalized Equal Width Wave Equation** by S. Hamdi, W. Enright (University of Toronto), W. Schiesser (Lehigh University), and J.J. Gotlieb (University of Toronto). *Corresponding author:* Samir Hamdi, `samir.hamdi@utoronto.ca`

Paper WP7-4: **Amplification and Scattering of Sound in Subsonic Flows Around Lifting and Non-Lifting Bodies** by A. Povitsky (Concordia University), D. Stanescu, and M.Y. Husaini (Florida State). *Corresponding author:* A. Povitsky, `povitsky@me.concordia.ca`

Paper WP7-5: **Quantum Dot and Acoustic Enclosure Problems in Lens-Shaped Structures** by M. Willatzen (University of Southern Denmark) and L.C. Lew Yan Voon (Worcester Polytechnic). *Corresponding author:* M. Willatzen, `willatzen@mci.sdu.dk`

Paper WP7-6: **A Nonlinear Spectral Finite Element Model for Analysis of Wave Propagation in Solid with Internal Frication and Dissipation** by D. RoyMahapatra and S. Gopalakrishnan (Dept of Aerospace Engineering, Indian Institute of Science, Bangalore). *Corresponding author:* D. RoyMahapatra, `dprasad@aero.iisc.ernet.in`

Paper WP7-7: **Finite Element Analysis of Nanowire Superlattice Structures** by M. Willatzen, R.V.N. Melnik (University of Southern Denmark), C. Galeriu, and L.C. Lew Yan Voon (Worcester Polytechnic). *Corresponding author:* M. Willatzen, `willatzen@mci.sdu.dk`

Paper WP7-8: **A Class of Boussinesq Equations for Shallow Water Waves** by Prabir Daripa (Dept of Mathematics, Texas A&M University). *Corresponding author:* P. Daripa, Daripa@math.tamu.edu

Paper WP7-9: **Elastic Wave Propagation in Dispersive Media** by E.L. Albuquerque and P.W. Mauriz (Dept of Physics, UFRGN). *Corresponding author:* E.L. Albuquerque, eudenilson@dfte.ufrn.br

Paper WP7-10: **A Fast Algorithm for Moving Interface Problems** by S. Dutta (SUNY at Stony Brook), J. Glimm (SUNY at Stony Brook and Brookhaven National Lab), J.W. Grove, D.H. Sharp (Los Alamos National Lab), and Y. Zhang (SUNY at Stony Brook). *Corresponding author:* Yongmin Zhang, yzhang@ams.sunysb.edu

Paper WP7-11: **Computational Aspects of Conservative Difference Schemes for Shape Memory Alloys Applications** by R.V.N. Melnik, L. Wang (University of Southern Denmark), P. Matus, I. Rybak (Institute of Mathematics, NASB). *Corresponding author:* Roderick Melnik, rmelnik@mci.sdu.dk

Paper WP7-12: **Optimization in the Context of Active Control of Sound** by Josip Loncaric (NIA/NASA LaRC) and Semyon Tsynkov (North Caroline State U.). Aviv University). [*Corresponding author:* Semyon Tsynkov, tsynkov@unity.ncsu.edu

Paper WP7-13: **On Disintegration of cellular flames** by L. Kagan (Tel Aviv Univeristy), S Minaev (ITAM SB RAN, Novosibirsk), and G. Sivashinsky (Tel Aviv University). *Corresponding author:* Leonid Kagan, kagan@cfd.eng.tau.ac.il

Paper WP7-14: **Investigation of a Three-Dimensional Spectral Element Method for Helmholtz's Equation** by Omid Mehdizadeh and Marius Paraschivoiu (University of Toronto and Concordia University). *Corresponding author:* Marius Paraschivoiu, paraschi@ME.Concordia.CA

Paper WP7-15: **On the long-time behavior of unsplit Perfectly Matched Layers** by Eliane Becache (INRIA, France), Peter G. Petropoulos (NJIT, USA), and Stephen D. Gedney. *Corresponding author:* Peter Petropoulos, peterp@ouzo.njit.edu

Paper WP7-16: **Effect of vortex shape on the sound generation in non-uniform flow** by A. Povitsky, T. Zheng, and G. Vatistas (Concordia University). *Corresponding author:* A. Povitsky, povitsky@me.concordia.ca

Paper WP7-17: **Numerical Simulation of Laminar Mixing Surfaces in Converging Microchannel Pulsatile Flows** by Matthew McGarry and Darren L. Hitt (U. of Vermont). *Corresponding author:* Darren Hitt, darren.hitt@uvm.edu

Paper WP7-18: **Preconditioning Techniques for the Solution of the Helmholtz Equation by the Finite Element Method** by Riyad Kechroud, Azzeddine Soulaimani (ETS, Montreal), and Yousef Saad (U. of Minnesota). *Corresponding author:* Azzeddine Soulaimani, azzeddine.soulaimani@etsmtl.ca

Paper WP7-19: **Direct Numerical Simulation of Instability-Wave Generation and Propagation in Supersonic Boundary Layers** by Li Jiang (Maths Dept, U. of Texas at Arlington), Meelan Choudhari, Chau-Lyan Chang (NASA Langley) and Chaoqun Liu (Maths Dept, U. of Texas at Arlington). *Corresponding author:* M.M. Choudhari, m.m.chounhari@larc.nasa.gov

Paper WP7-20: **Modeling of Plume Dynamics and Shock Wave in Laser Ablation with Application to nano-technology** by Diomar Lobao (Concordia University and CERCA) and Alex Povitsky (Concordia University and CERCA). *Corresponding author:* Alex Povitsky, povitsky@me.concordia.ca

Paper WP7-21: **Multi and Single- Atoms Liquid Flow Systems for Nano-sized Channels** by Ming-Chang Lu (Industrial Research Lab, Taiwan), F. Tseng, H. Hsieh, and C-C. Chieng (National Tsing Hua University, Taaiwan). *Corresponding author:* Ching-Chang Chieng, cchieng@mx.nthu.edu.tw

Paper WP7-22: **Monte Carlo Simulations of Spin-Polarized Transport** by Min Shen, Semion Saikin, Ming-C Cheng and Vladimir Privman (Center for Quantum Device Technology, Clarkson University, Potsdam, NY, USA). *Corresponding author:* Vladimir Privman, privman@clarkson.edu