

WAVES'05 PROGRAM
June 20th – 24th 2005

All talks will take place in **Barus & Holley** building.

Plenary talks: Room 168.

Sessions I: Room 141.

Sessions II: Room 153.

Sessions III: Room 190.

Sessions IV: Room 158.

Monday night reception: Faculty club.

Monday June 20th 2005

Morning

08:00 – 10:00 : Registration with coffee

10:00 – 10:55 : Invited lecture : **C. Bardos** (*Chairman : O. Lafitte*)

Session I

Asymptotic Analysis (*Chairman: H. Haddar*)

11:00 – 11:30 : **AA1-103** -- ASYMPTOTIC MODELS FOR ELECTROMAGNETIC SCATTERING FROM STRONGLY ABSORBING OBSTACLES -- M. DURUFLE, H. HADDAR, P. JOLY

11:30 – 12:00 : **AA2-21** -- ASYMPTOTIC ESTIMATES OF THE ELECTRIC FIELD IN A BIOLOGICAL CELL AT LOW FREQUENCIES -- CLAIR POIGNARD

12:00 – 12:30 : **AA3-59** -- EMP PROPAGATION IN THE COLE-COLE DIELECTRIC MODEL: ASYMPTOTICS AND NUMERICS -- PETER G. PETROPOULOS

Session II

Guided Waves and Resonance (*Chairman: A.-S. Bonnet-Ben Dhia*)

11:00 – 11:30 : **GWR1-88** -- EXACT BOUNDARY CONDITIONS FOR PERIODIC WAVEGUIDES -- S. FLISS, P. JOLY, J.-R. LI

11:30 – 12:00 : **GWR2-89** -- GUIDED WAVES IN PHOTONIC FIBERS -- SOFIANE SOUSSI

12:00 – 12:30 : **GWR3-121** -- A DIFFUSION ANALYSIS APPROACH FOR MULTIMODE RANDOM OPTICAL WAVEGUIDES -- EMMANUEL PERREY-DEBAIN, DAVID ABRAHAMS

Session III

Nonlinear Waves (*Chairman: D. Gottlieb*)

11:00 – 11:30 : **NLW1-48** -- AN IMPLICIT MULTI-DOMAIN WENO FINITE DIFFERENCE METHOD -- S. GOTTLIEB AND K. SEBASTIAN
11:30 – 12:00 : **NLW2-126** -- HYBRID MULTI-DOMAIN SPECTRAL-WENO METHODS FOR HYPER-BOLIC EQUATIONS -- WAI SUN DON, BRUNO COSTA
12:00 – 12:30 : **NLW3-131** -- LONG RANGE NUMERICAL PROPAGATION OF SHORT WAVES AS NONLINEAR SOLITARY WAVES -- J. STEINHOFF, N. LYNN, L. WANG

Session IV

Numerical Methods (*Chairman: E. Bécache*)

11:00 – 11:30 : **NM1-46** -- A FREE LAGRANGE MULTIPLIER SPACE-TIME MESH REFINEMENT METHOD FOR WAVE PROPAGATION PROBLEMS -- E. BÉCACHE, P. JOLY, J. RO-DRÍGUEZ

11:30 – 12:00 : **NM2-63** -- HIGH-ORDER SINGLE-STEP METHODS FOR SIMULATING WAVES – THOMAS HAGSTROM

12:00 – 12:30 : **NM3-65** -- HIGH ORDER FINITE DIFFERENCE METHODS FOR WAVE PROPAGATION IN DISCONTINUOUS MEDIA -- KEN MATTSSON, JAN NORDSTRÖ

12:30 – 14:00 : Lunch

Monday June 20th 2005

Afternoon

14:00 – 14:55 : Invited lecture : **G. Uhlmann** (*Chairman : P. Monk*)

Session I

Asymptotic Analysis (*Chairman: C. Bardos*)

15:00 – 15:30 : **AA4-90** -- MATCHING OF ASYMPTOTIC EXPANSIONS FOR THE WAVE PROPAGATION IN MEDIA WITH THIN SLOT -- P. JOLY, S. TORDEUX

15:30 – 16:00 : **AA5-108** -- HIGH-FREQUENCY ASYMPTOTICS OF WAVES TRAPPED BY AN UN-DERWATER RIDGE -- A. M. MARIN, R. D. ORTIZ, P. ZHEVANDROV

16:00 – 16:30 : Coffee break

Elastic Waves (*Chairman: P. Martin*)

16:30 – 17h00 : **EW1-7** -- ON WAVE PROPAGATION IN A RANDOM GRANULAR ELASTIC MEDIUM – GAYATRI CHATTOPADHYAY, R. K. BHATTACHARYYA

17:00 – 17:30 : **EW2-14** -- ANISOTROPIC ELASTODYNAMICS IN HALF SPACE: ANALYTIC METHOD FOR POLYNOMIAL DATA -- V.G. YAKHNO, H.K. AKMAZ

17:30 – 18:00 : **EW3-85** -- COUPLING FINITE ELEMENTS AND INTEGRAL EQUATIONS IN TIME-DOMAIN VIBROACOUSTICS. -- PATRICK JOLY PASCAL GROB

18:00 – 18:30 : **EW4-100** -- MODELING OF 1D ELASTIC P-WAVES IN A FRACTURED ROCK WITH HYPERBOLIC JUMP CONDITIONS -- B. LOMBARD - J. PIRAUX

Session II

Guided Waves and Resonance (*Chairman: A.-S. Bonnet-Ben Dhia*)

15:00 – 15:30 : **GWR4-19** -- INFLUENCE OF THE COUPLING OF AN ELASTIC PLATE WITH A CON-FINED FLOW ON RESONANCES -- A.-S. BONNET-BEN DHIA AND J.-F. MERCIER

15:30 – 16:00 : **GWR5-94** -- WAVES IN A 1-D MEDIUM WITH TWO RESISTIVE TERMINATIONS: COMPLETENESS OF THE MODES -- J.KERGOMARD, D.MATIGNON, V. DEBUT

16:00 – 16:30 : Coffee break

Artificial Boundary Conditions (*Chairman: T. Hagstrom*)

16:30 – 17h00 : **ABC1-22** -- PERFECTLY MATCHED LAYERS FOR TIME-HARMONIC ACOUSTICS IN THE PRESENCE OF A UNIFORM FLOW -- ELIANE BÉCACHE, ANNE-SOPHIE BONNET-BEN DHIA, GUILLAUME LEGENDRE

17:00 – 17:30 : **ABC2-81** -- NEW CONSTRUCTIONS OF PERFECTLY MATCHED LAYERS FOR THE LINEARIZED EULER EQUATIONS -- F. NATAF

17:30 – 18:00 : **ABC3-127** -- ON THE CONSTRUCTION AND THE ANALYSIS OF PML MODELS FOR THE LINEARIZED EULER EQUATION -- ADIB N. RAHMOUNI

18:00 – 18:30 : **ABC4-76** -- TRANSPARENT BOUNDARY CONDITIONS FOR COMPUTING RESONANCES -- THORSTEN HOHAGE

Session III

Domain Decomposition (*Chairman: F. Nataf*)

15:00 – 15:30 : **DDM1-33** -- MULTI-DOMAIN DECOMPOSITION FOR TRANSIENT ELECTROMAGNETIC SCENES IN 3D HOMOGENEOUS MEDIA USING VOLUMIC METHODS -- V. MOUYSSSET, P.A. MAZET, P. BORDERIES

15:30 – 16:00 : **DDM2-40** -- A COUPLING BEM-FEM METHOD USING A FETI-LIKE DOMAIN DECOMPOSITION METHOD -- Y. BOUBENDIR, A. BENDALI, M. FARES

16:00 – 16:30 : Coffee break

Electromagnetism (*Chairman: L. Pichon*)

16:30 – 17:00 : **EM1-26** -- SIMULATION OF LASER PROPAGATION IN A PLASMA WITH A FREQUENCY MAXWELL EQUATION -- SENTIS R., DESROZIERS S., NATAF F.

17:00 – 17:30 : **EM2-55** -- NODAL FINITE ELEMENTS FOR THE AXISYMMETRIC MAXWELL EQUATIONS -- SIMON LABRUNIE

17:30 – 18:00 : **EM3-66** -- FINITE ELEMENT MODEL FOR SCATTERING AND RADIATION PROBLEMS OF OPTICS -- X. WEI, A.J.H. WACHTERS AND H.P. URBACH

18:00 – 18:30 : **EM4-113** -- COMPARISON OF HIGHER-ORDER FINITE ELEMENT METHODS FOR THE 2-D MAXWELL'S EQUATIONS IN FREQUENCY DOMAIN -- G. COHEN, M. DURUFLE

Session IV

Inverse Scattering (*Chairman: F. Cakoni*)

15:00 – 15:30 : **IS1-102** -- ON A HYBRID METHOD FOR SOUND-HARD OBSTACLES RECONSTRUCTION -- KRESS R., SERRANHO P.

15:30 – 16:00 : **IS2-106** -- ON THE USE OF THE RECIPROCITY GAP FUNCTIONAL IN INVERSE SCATTERING FROM PLANAR IMPEDANCE CRACKS -- FABRICE DELBARY

16:00 – 16:30 : Coffee break

Inverse Scattering (*Chairman: F. Cakoni*)

16:30 – 17:00 : **IS3-15** -- A NEW COMPUTATIONAL APPROACH FOR INVERSE MEDIUM SCATTERING AT A FIXED FREQUENCY -- GANG BAO AND PEIJUN LI

17:00 – 17:30 : **IS4-97** -- ON THE MULTI WAVE NO RESPONSE TEST ANF ITS RELATION TO OTHER SAMPLING METHODS. -- GEN. NAKAMURA, ROLAND. POTTHAST AND MOURAD. SINI.

17:30 – 18:00 : **IS5-101** -- INVERSE ACOUSTIC SCATTERING BY SMALL-OBSTACLE EXPANSION OF MISFIT FUNCTION -- M. BONNET

18:00 – 18:30 : **IS6-110** -- THE INVERSE ELECTROMAGNETIC SCATTERING PROBLEM FOR A PARTIALLY COATED DIELECTRIC -- FIORALBA CAKONI, DAVID COLTON AND PETER MONK

Tuesday June 21st 2005

Morning

09:00 – 09:55 : Invited lecture : **O. P. Bruno** (*Chairman : P. Martin*)

10:00 – 10:30 : Coffee break

Session I

Aeroacoustics (*Chairman: C. Bailly*)

10:30 – 11:00 : **AE1-27** -- CONTROL OF AERO-ACOUSTIC PROPAGATIONS WITH WALL IMPEDANCE BOUNDARY CONDITIONS : APPLICATION TO A POROUS MATERIAL MODEL -- Y. VENTRIBOUT, P.A. MAZET

11:00 – 11:30 : **AE2-30** -- STABILIZATION OF KELVIN-HELMHOLTZ INSTABILITIES IN THREE-DIMENSIONAL LINEARIZED EULER EQUATIONS USING A NON-DISSIPATIVE TIME-DOMAIN DISCONTINUOUS GALERKIN METHOD -- M. BERNACKI, S. LANTERI, S. PIPERNO

11:30 – 12:00 : **AE8-78** -- A DISCONTINUOUS GALERKIN METHOD WITH QR SPECTRAL ELEMENTS FOR AEROACOUSTICS -- N. CASTEL, G. COHEN

12:00 – 12:30 : **AE4-56** -- GENERALIZED IMPEDANCE BOUNDARY CONDITIONS IN ACOUSTICS WITH FLOW -- E. LUNÉVILLE, J.F. MERCIER

Session II

Artificial Boundary Conditions (*Chairman: T. Hohage*)

10:30 – 11:00 : **ABC5-62** -- SOLVING SCATTERING PROBLEMS FOR MAXWELL'S EQUATION USING POLYGONAL ARTIFICIAL BOUNDARIES -- D.A.R. JUSTO, T. WARBURTON, T. HAGSTROM

11:00 – 11:30 : **ABC6-96** -- AN ABSORBING LAYER FOR THE NONLINEAR KLEIN-GORDON EQUATION -- GUNILLA KREISS

11:30 – 12:00 : **ABC7-82** -- DIRICHLET TO NEUMANN MAP FOR DOMAINS WITH CORNERS AND APPROXIMATE BOUNDARY CONDITIONS -- LAURENCE HALPERN, OLIVIER LAFITTE

12:00 – 12:30 : **ABC8-104** -- TIME DOMAIN ERROR ESTIMATES FOR ABSORBING BOUNDARY CONDITIONS AND PERFECTLY MATCHED LAYERS. -- JULIEN DIAZ, PATRICK JOLY

Session III

Domain Decomposition (*Chairman: N. Gmati*)

10:30 – 11:00 : **DDM3-72** -- DOMAIN DECOMPOSITION METHOD FOR ELECTROMAGNETIC SCATTERING BY ELECTRICALLY DEEP CAVITIES -- N. BALIN, F. MILLOT AND N. ZERBIB

11:00 – 11:30 : **DDM4-116** -- A DOMAIN DECOMPOSITION METHOD FOR TIME-HARMONIC ACOUSTIC SCATTERING BY ELASTIC OBJECTS IN SEDIMENT -- KAZUFUMI ITO, JARI TOIVANEN

11:30 – 12:00 : **DDM5-142** -- A DOMAIN DECOMPOSITION METHOD FOR THE SOLUTION OF LARGE ELECTROMAGNETIC PROBLEMS USING A MASSIVELY PARALLEL HYBRID FINITE ELEMENT - INTEGRAL EQUATION MLFMA -- D. GOUDIN, M. MANDALLENNA, K. MER-NKONGA, B. STUPFEL

Session IV

Elastic Waves (*Chairman: G. Cohen*)

10:30 – 11:00 : **EW5-12** -- ON SH-WAVE PROPAGATION IN LATERALLY HETEROGENEOUS ELASTIC MEDIA -- A.ROY, M.MITRA, R.K.BHATTACHARYYA

11:00 – 11:30 : **EW6-20** -- THE ELASTIC WAVE FRONT SHAPE GENERATED BY A CIRCULAR SOURCE IN PIEZOELECTRIC MEDIUM OF CRYSTAL CLASS 6MM -- CARLOS HENRIQUE DAROS

11:30 – 12:00 : **EW7-91** -- MIXED HIGHER ORDER SPECTRAL ELEMENTS FOR VIBROACOUSTICS IN TIME DOMAIN -- P.GROB G.COHEN

12:00 – 12:30 : **EW8-47** -- PARALLEL COMPUTATION OF ELASTIC-PLASTIC WAVES PROPAGATION IN GRANULAR MATERIAL -- SADOVSKII VLADIMIR M. & SADOVSKAYA OXANA V.

12:30 – 14:00 : Lunch

Tuesday June 21st 2005

Afternoon

14:00 – 14:55 : Invited lecture : **G. Iooss** (*A.-S. Bonnet-Ben Dhia*)

Session I

Direct Scattering (*Chairman: S. N. Chandler-Wilde*)

15:00 – 15:30 : **DS1-79** -- HIGH-ORDER-HIGH-FREQUENCY SOLVERS FOR ROUGH-SURFACE ACOUSTIC AND ELECTROMAGNETIC SCATTERING PROBLEMS -- CATALIN TURC, FERNANDO REITICH

15:30 – 16:00 : **DS2-84** -- ACOUSTIC SCATTERING BY AN UNBOUNDED ROUGH SURFACE WITH FINITE SURFACE IMPEDANCE -- S.N.CHANDLER-WILDE AND M.THOMAS

16:00 – 16:30 : Coffee break

Direct Scattering (*Chairman: S. N. Chandler-Wilde*)

16:30 – 17:00 : **DS3-11** -- TIME DEPENDENT SCATTERING BY ARRAYS OF ELLIPTIC CYLINDERS – M. NIGSCH

17:00 – 17:30 : **DS4-52** -- SCATTERING BY BI-PERIODIC GRATINGS: THE INTEGRAL EQUATION APPROACH -- TILO ARENS

17:30 – 18:00 : **DS15-132** -- PERFORMANCE ASSESSMENT OF THE BGT CONDITION FOR LOW FREQUENCY ACOUSTIC SCATTERING PROBLEMS WITH ELLIPTICAL-SHAPED SCATTERERS -- R. C. REINER JR., R. DJELLOULI

Session II

15:00 – 16:00 : No Talk

16:00 – 16:30 : Coffee break

Artificial Boundary Conditions (*Chairman: J. Li*)

16:30 – 17:00 : **ABC9-50** -- ON PROPERTIES OF HYPERBOLIC EQUATIONS AND NONREFLECTING BOUNDARY CONDITIONS -- ADI DITKOWSKI, MICHAEL SEVER

17:00 – 17:30 : **ABC10-54** -- STABILITY, CONVERGENCE, AND PARAMETER SELECTION FOR HIGH-ORDER LOCAL RADIATION BOUNDARY CONDITIONS -- MANUELA DE CASTRO AND THOMAS HAGSTROM

17:30 – 18:00 : **ABC11-64** -- ADAPTIVE FINITE-ELEMENT IMPLEMENTATION OF ARBITRARY ORDER RADIATION BOUNDARY CONDITIONS ON RECTANGULAR DOMAINS -- T. HAGSTROM, D. GIVOLI, AND I. PATLASHENKO

18:00 – 18:30 : **ABC12-68** -- A NEW PERFECTLY MATCHED LAYER MODEL FOR THE PROPAGATION OF ELECTROMAGNETIC WAVES IN 3D: MATHEMATICAL ASPECTS -- H. BARUCQ, M. FONTES

Session III

Numerical Methods (*Chairman: J. Hesthaven*)

15:00 – 15:30 : **NM14-135** -- CONTROLLABILITY METHOD FOR THE HELMHOLTZ EQUATION WITH SPECTRAL ELEMENTS -- ERKKI HEIKKOLA, SANNA MÖNKÖLÄ, ANSSI PENNANEN, TUOMO ROSSI

15:30 – 16:00 : **NM5-43** -- A WAVELET-PACKET TRANSFORMATION FOR THE FAST SOLUTION OF OSCILLATORY INTEGRAL EQUATIONS -- DAAN HUYBRECHS AND STEFAN VANDEWALLE

16:00 – 16:30 : Coffee break

Numerical Methods (*Chairman: J. Hesthaven*)

16:30 – 17:00 : **NM6-34** -- FULLY EXPLICIT DGTD METHODS FOR WAVES PROPAGATION ON TIME-AND-SPACE LOCALLY REFINED GRIDS -- SERGE PIPERNO

17:00 – 17:30 : **NM7-45** -- SPURIOUS SOLUTIONS AND THE DISCONTINUOUS GALERKIN METHODS ON NONCONFORMING MESHES -- T. WARBURTON

17:30 – 18:00 : **NM8-130** -- INTERIOR PENALTY DG-FEM FOR SECOND ORDER WAVE EQUATIONS – MARCUS J. GROTE, ANNA SCHNEEBELI, AND DOMONIK SCHOETZAU

18:00 – 18:30 : **NM9-140** -- A DISCONTINUOUS GALERKIN METHOD BASED ON OSCILLATED FINITE ELEMENTS AND LAGRANGE MULTIPLIERS FOR SOLVING HELMHOLTZ PROBLEMS -- A.GILLMAN, R. DJELLOULI, AND M. AMARA

Session IV

Inverse Problems and Imaging (*Chairman: I. Terrasse*)

15:00 – 15:30 : **IPI1-16** -- THEORY OF ACOUSTIC WAVE PHASE CONJUGATION IN ACTIVE MEDIA – ALAIN MERLEN, ZHANG QI

15:30 – 16:00 : **IPI2-73** -- MATHEMATICAL AND NUMERICAL STUDY OF A TIME REVERSAL MIRROR -- CHOKRI BEN AMAR, NABIL GMATI, CHRISTOPHE HAZARD AND KARIM RAMDANI

16:00 – 16:30 : Coffee break

Inverse Problems and Imaging (*Chairman: I. Terrasse*)

16:30 – 17:00 : **IPI3-69** -- PARAMETER DETERMINATION IN DIFFUSIVE MEDIA VIA THERMAL -- T. HOHAGE, M.L. RAPÙN, F.J. SAYAS, M.L. SEIN-ECHALUCE

17:00 – 17:30 : **IPI4-93** -- INVERSE METHOD FOR IDENTIFICATION OF ACOUSTIC SOURCES AT LAUNCH VEHICLE LIFT-OFF -- S.ALESTRA, V.SRITHAMMAVANH, I.TERRASSE, S.JEANJEAN, B.TROCLET

17:30 – 18:00 : **IPI5-111** -- ACOUSTICAL CHARACTERIZATION OF 1-D NON-HOMOGENEOUS LOSSLESS POROUS MATERIALS -- L. DE RYCK, Z.E.A. FELLAH, W. LAURIKS, A. WIRGIN, C. DEPOLLIER

18:00 – 18:30 : **IPI6-128** -- ADAPTIVE IMAGING IN CLUTTER -- L. BORCEA AND G. PAPANICOLAOU AND C. TSOGKA

Wednesday June 22nd 2005

09:00 – 09:55 : Invited lecture : **F. Cakoni** (*Chairman : D. Colton*)

10:00 – 10:30 : Coffee break

10:30 – 12:30 : **Free time**

12:30 – 18:30 : **Sightseeing tours**

Thursday June 23rd 2005

Morning

09:00 – 09:55 : Invited lecture : **C. Bailly** (*Chairman : S. Piperno*)

10:00 – 10:30 : Coffee break

Session I

Direct Scattering (*Chairman: J. Tausch*)

10:30 – 11:00 : **DS6-32** -- WELL-CONDITIONED INTEGRAL EQUATIONS FOR THE ITERATIVE SOLUTION OF 3D ACOUSTIC AND ELECTROMAGNETIC SCATTERING PROBLEMS IN THE HIGH-FREQUENCY SPECTRUM -- X. ANTOINE AND M. DARBAS

11:00 – 11:30 : **DS7-86** -- A HIGH-FREQUENCY INTEGRAL EQUATION METHOD FOR ELECTROMAGNETIC AND ACOUSTIC SCATTERING SIMULATIONS: RATE OF CONVERGENCE OF MULTIPLE SCATTERING ITERATIONS -- FATIH ECEVIT, F. REITICH

11:30 – 12:00 : **DS8-99** -- APPROXIMATION OF LOGARITHMIC DERIVATIVE OF HANKEL FUNCTION WITH APPLICATIONS TO HIGH FREQUENCY WAVE PROPAGATION -- A. ATLE, B. ENGQUIST

12:00 – 12:30 : **DS9-119** -- A BOUNDARY ELEMENT METHOD FOR HIGH FREQUENCY SCATTERING BY CONVEX POLYGONS -- S.N. CHANDLER-WILDE, S. LANGDON

Session II

Multipole Methods and Fast Solvers (*Chairman: O. P. Bruno*)

10:30 – 11:00 : **MMFS1-83** -- COUPLING OF ULTRA-WEAK VARIATIONAL FORMULATION AND INTEGRAL REPRESENTATION USING A FAST MULTIPOLE METHOD IN ELECTROMAGNETISM -- DARRIGRAND ERIC AND MONK PETER

11:00 – 11:30 : **MMFS2-105** -- NEW BOUNDARY INTEGRAL EQUATIONS FOR ELECTROMAGNETIC SCATTERING PROBLEMS -- SOPHIE BOREL, DAVID P. LEVADOUX, FRAN-COIS ALOUGES, BAS L. MICHIELSEN

11:30 – 12:00 : **MMFS3-118** -- NUMERICAL ANALYSIS OF PSEUDODIFFERENTIAL PRECONDITIONERS FOR THE CFIE EQUATION OF ELECTROMAGNETISM -- DAVID P. LEVADOUX

12:00 – 12:30 : **MMFS4-133** -- ON HIDDEN FACE REMOVAL IN BOUNDARY INTEGRAL EQUATIONS -- B. L. MICHIELSEN

Session III

Artificial Boundary Conditions (*Chairman: P. G. Petropoulos*)

10:30 – 11:00 : **ABC13-39** -- ANALYSIS OF A FINITE PML APPROXIMATION TO A MAXWELL'S SCATTERING PROBLEM -- J.H. BRAMBLE AND J.E. PASCIAK

11:00 – 11:30 : **ABC14-6** -- OPTIMAL UNSPLIT PERFECTLY MATCHED LAYER (PML) FOR 2D ELASTICITY -- VADIM LISITSA

11:30 – 12:00 : **ABC15-44** -- A NEW PML FOR THE SIMULATION OF ELASTIC WAVES IN ANI-SOTROPIC MEDIA -- DANIEL APPELÖ

12:00 – 12:30 : **ABC16-67** -- OPTIMIZATION OF A PML MODEL FOR ELASTO-DYNAMICS -- H. BARUCQ, M. FONTES, D. KOMATITSCH

Session IV

Inverse Problems and Imaging (*Chairman: T. Arens*)

10:30 – 11:00 : **IPI7-95** -- TIME-REVERSAL FOR TEMPORAL COMPRESSION AND SPATIAL FOCUSING OF ACOUSTIC WAVES IN ENCLOSURES -- DEBORAH BEREBICHEZ AND GEORGE PAPANICOLAOU

11:00 – 11:30 : **IPI8-141** -- DETECTION AND IMAGING IN A STRONGLY CLUTTERED ENVIRONMENT -- S. HOU, K. SOLNA, H. ZHAO SCHENKER

11:30 – 12:00 : **IPI9-25** -- ONE WAY OF ORGANIZING N-TAP CO-PHASED WEIGHTED MEDIAN FILTERS FOR PROCESSING OF PERIODIC SIGNALS -- V. I. ZNAK, A. P. GRIGORUK

12:00 – 12:30 : **IPI10-139** -- SMALL-INCLUSION ASYMPTOTIC FOR INVERSE PROBLEMS IN ACOUSTICS -- BOJAN B. GUZINA AND MARC BONNET

12:30 – 14:00 : Lunch

Thursday June 23rd 2005

Afternoon

14:00 – 14:55 : Invited lecture : **I. Perugia** (*Chairman : J. Hesthaven*)

Session I

Direct Scattering (*Chairman: P. Joly*)

15:00 – 15:30 : **DS10-129** -- A SPECTRAL BOUNDARY ELEMENT METHOD FOR MEDIUM AND HIGH FREQUENCY SCATTERING -- JOHANNES TAUSCH

15:30 – 16:00 : **DS11-117** -- APPROXIMATION OF HIGH FREQUENCY ACOUSTIC WAVE SURFACE INTEGRALS -- S. LANGDON, M. GANESH, I.H. SLOAN

16:00 – 16:30 : Coffee break

Direct Scattering (*Chairman: P. Joly*)

16:30 – 17:00 : **DS12-123** -- AN IMPROVED MODE MATCHING METHOD FOR LARGE CAVITIES -- GANG BAO AND WEIWEI ZHANG

17:00 – 17:30 : **DS13-120** -- ERROR ANALYSIS OF A COUPLED FINITE ELEMENT/DTN MAP ALGORITHM ON GENERAL DOMAINS FOR 2D EXTERIOR SCATTERING PROBLEMS -- DAVID P. NICHOLLS, NILIMA NIGAM

17:30 – 18:00 : **DS14-136** -- SCATTERING CROSS SECTION OF NON-SMOOTH CYLINDRICAL OBSTACLES OF ARBITRARY SHAPE -- VIANEY VILLAMIZAR AND MATT WEBER

18:00 – 18:30 : **NM16-126** -- RAPID EVALUATION OF RADIATION BOUNDARY KERNELS FOR BLACKHOLE PERTURBATIONS, S. R. LAU

Session II

Electromagnetism (*Chairman: H. P. Urbach*)

15:00 – 15:30 : **EM5-112** -- STAGGERED GRID DISCONTINUOUS GALERKIN METHODS FOR MAXWELL'S EQUATIONS -- ERIC T. CHUNG AND BJORN ENGQUIST

15:30 – 16:00 : **EM6-109** -- HEXAHEDRAL DISCONTINUOUS GALERKIN METHODS FOR MAXWELL'S EQUATIONS IN TIME DOMAIN -- G. COHEN, X. FERRIERES, S. PERNET

16:00 – 16:30 : Coffee break

Electromagnetism (*Chairman: H. P. Urbach*)

16:30 – 17:00 : **EM7-77** -- ON A QUASILINEAR ZAKHAROV SYSTEM DESCRIBING LANDAU DAMPING -- R. BELAOUAR, T. COLIN, G. GALLICE, C. GALUSINSKI

17:00 – 17:30 : **EM8-80** -- COMBINING FEM AND PADÉ APPROXIMATION FOR BROADBAND ANALYSIS OF RADIATING STRUCTURES -- BRAHIM ESSAKHI, LIONEL PICHON

17:30 – 18:00 : **EM9-92** -- A VARIATIONAL APPROACH FOR WAVE TRANSMISSION BETWEEN MEDIA WITH OPPOSITE SIGN DIELECTRIC CONSTANTS -- A. S. BONNET-BENDHIA, P. CIARLET JR., C. M. ZWÖLF

18:00 – 18:30 : **EM10-35** -- REALISTIC NUMERICAL MODELING OF HUMAN HEAD TISSUES EXPOSURE TO ELECTROMAGNETIC WAVES FROM MOBILES PHONES -- G. SCARELLA, O. CLATZ, S. LANTERI, G. BEAUME, S. OUDOT, J.-P. PONS, S. PIPERNO, P. JOLY, J. WIART

Session III

Aeroacoustics (*Chairman: J.-F. Mercier*)

15:00 – 15:30 : **AE5-60** -- NUMERICAL SIMULATION OF ACOUSTIC PROPAGATION IN A SHEAR FLOW IN THE FREQUENCY DOMAIN -- A.-S. BONNET-BEN DHIA, E.-M. DUCLAIROIR, J.-F. MERCIER

15:30 – 16:00 : **AE6-75** -- STUDY OF THE AERO-ACOUSTICAL PHENOMENA BY USE OF A HIGH FREQUENCY PARAMETRIX -- P.J. DELORME

16:00 – 16:30 : Coffee break

Aeroacoustics (*Chairman: J.-F. Mercier*)

16:30 – 17:00 : **AE7-74** -- A DISCONTINUOUS GALERKIN METHOD FOR AERO-ACOUSTICAL APPLICATIONS -- P.J. DELORME P.A. MAZET C.PEYRET Y. VENTRIBOUT

17:00 – 17:30 : **AE3-36** -- HIGH FREQUENCY AND NUMERICAL EULERIAN METHODS FOR AERO-ACOUSTIC PROBLEMS -- OLIVIER LAFITTE, YOUNESS NOUMIR

17:30 – 18:00 : **AE9-114** -- NUMERICAL ANALYSIS OF TIME-DEPENDENT GALBRUN EQUATION IN AN INFINITE DUCT -- K. BERRIRI, A.S BONNET-BENDHIA, P. JOLY

Session IV

Numerical Methods (*Chairman: P. Monk*)

14:00 – 14:55 : Invited lecture : **I. Perugia** (*Chairman : J. Hesthaven*)

15:00 – 15:30 : **NM10-58** -- NUMERICAL COMPUTATION OF WAVE MOTION THROUGH DYNAMIC MATERIALS -- SUZANNE L. WEEKES

15:30 – 16:00 : **NM11-107** -- MULTI-MODE APPROXIMATIONS TO WAVE MOTION -- P. G. CHAMBERLAIN AND D. PORTER

16:00 – 16:30 : Coffee break

Numerical Methods (*Chairman: P. Monk*)

16:30 – 17:00 : **NM12-49** -- KRYLOV SUBSPACE ITERATIVE METHODS ACCELERATED WITH MULTIGRID FOR THE 3D HETEROGENEOUS HELMHOLTZ EQUATION -- Y.A. ERLANGGA, C. VUIK, C.W. OOSTERLEE

17:00 – 17:30 : **NM13-124** -- ASYMPTOTICALLY DERIVED BOUNDARY ELEMENT METHOD FOR THE HELMHOLTZ EQUATION -- ELДАР GILADI

17:30 – 18:00 : **NM4-42** -- AN ALGORITHM FOR LONG RANGE WAVE PROPAGATION -- KAI HUANG, GEORGE PAPANICOLAOU, KNUT SOLNA, CHRYSOULA TSOGKA, AND HONGKAI ZHAO

18:00 – 18:30 : **NM15-134** -- A NEW IMPLEMENTATION OF FULLY-AUTOMATIC HP-ADAPTIVITY FOR ACOUSTIC AND ELECTROMAGNETIC SCATTERING IN 3D -- JASON KURTZ AND LESZEK DEMKOWICZ

Friday June 24th 2005

Morning

09:00 – 09:55 : Invited lecture : **A. Figotin** (*Chairman : G. Bao*)

10:00 – 10:30 : Coffee break

Session I

Direct Scattering (*Chairman: D. Levadoux*)

10:30 – 11:00 : **DS16-41** -- ON THE T-MATRIX FOR SCATTERING BY A SMALL OBSTACLE -- P. A. MARTIN

11:00 – 11:30 : **DS17-53** -- THE 1-D KINETIC MODEL FOR LASER-PLASMA INTERACTION AND RAMAN SCATTERING -- J. A. CARRILLO, S. LABRUNIE

Session II

Nonlinear Waves (*Chairman: G. Kreiss*)

10:30 – 11:00 : **NLW4-13** -- SIMULATION OF STANDING WAVES USING MOVING-GRID TECHNIQUES WITH SPECTRAL ELEMENT METHODS -- ROLAND BOUFFANAIS AND MICHEL O. DEVILLE

11:00 – 11:30 : **NLW5-24** -- NONLINEAR WATER-WAVE PROBLEM: A CONSISTENT COUPLED-MODE REFORMULATION AND ITS APPLICATION TO NUMERICAL INVESTIGATION OF TRAVELLING WAVE SOLUTIONS -- G.A. ATHANASSOULIS AND K.A. BELIBASSAKIS

11:30 – 12:00 : **NLW6-29** -- NUMERICAL SOLUTION OF THE NONLINEAR HELMHOLTZ EQUATION USING NONORTHOGONAL EXPANSIONS -- GADI FIBICH AND SEMYON TSYNKOV

12:00 – 12:30 : **NLW7-122** -- A 3D FINITE ELEMENT MODEL OF MARTENSITIC TRANSFORMATION DYNAMICS USING A CONSISTENT MICROSCOPIC ENERGY REPRESENTATION -- RVN MELNIK AND DR MAHAPATRA

Session III

Inverse Scattering (*Chairman: D. Colton*)

10:30 – 11:00 : **IS7-18** -- LOCATING AN OBSTACLE IN A 3D WAVEGUIDE USING THE CONVEX SCATTERING SUPPORT -- L. BOURGEOIS, S. KUSIAK, C. CHAMBHEYRON

11:00 – 11:30 : **IS8-23** -- A LINEAR SAMPLING METHOD FOR INVERSE SCATTERING PROBLEMS IN LAYERED ELASTIC MEDIA -- BOJAN B. GUZINA AND ANDREW MADYAROV

11:30 – 12:00 : **IS9-71** -- IMAGING BURIED OBJECTS FROM ELECTROMAGNETIC MEASUREMENTS -- F. CAKONI, M'B MBAREK, H. HADDAR

Session IV

Hydrodynamics and Gravity Waves (*Chairman: C. Hazard*)

10:30 – 11:00 : **HGW1-31** -- AN IMPLICIT DISCONTINUOUS GALERKIN FINITE ELEMENT METHOD FOR WATER WAVES -- J.J.W. VAN DER VEGT, V.R. AMBATI AND O. BOKHOVE

11:00 – 11:30 : **HGW2-51** -- SPACE-TIME DISCONTINUOUS GALERKIN METHOD FOR ROTATING SHALLOW WATER FLOWS -- V. R. AMBATI, O. BOKHOVE

11:30 – 12:00 : **HGW3-87** -- ON SPLITTING-BASED MASS AND TOTAL ENERGY CONSERVING SHALLOW-WATER SCHEMES -- YU.N. SKIBA, D.M. FILATOV

12:00 – 12:30 : **HGW4-3** -- SINGULARITY EXPANSION METHOD APPLIED TO THE MOTIONS OF A FLOATING ELASTIC PLATE -- CHRISTOPHE HAZARD AND FRANÇOIS LORET