IABEM 2006 Programme

Monday July 10th

Room	Aula (Assembly Hall)	
9.00	Opening	
Session	Boundary Element Analysis: The State of the Art in Theory and Applications I	
Chair	Olaf Steinbach	
9.30	Positivity of boundary integral operators and the convergence of Neumann's series M. Costabel	
10.00	Fast Multipole Boundary Element Method for the Simulation of Acoustic-Structure Interaction L. Gaul, M. Fischer	
10.30	Modeling of the Industrial Problems Via BEM Z. Andjelic	
11.00	Coffee Break	

Room	HS I	HS II	HS VI
Session	hp Methods	Inverse Problems	Heat Conduction
Chair	Ernst P. Stephan	Marc Bonnet	Jan Sladek
11.30	An hp-BEM for high frequency scattering by convex polygons M. Melenk, S. Langdon	A First order inverse method for boundary value problems using BEM F. Delvare, A. Cimetiere	Efficient Evaluation of Heat Potentials based on Chebyshev Interpolation J. Tausch
12.00	The hp-version boundary element Galerkin method in 3D M. Maischak	FMM-BEM and topological derivative applied to acoustic inverse scattering N. Nemitz, M. Bonnet	Hybrid Boundary Node Method (HdBNM) Applied to the Steady-State Heat Conduction Problem of Functionally Graded Materials M. Tanaka, J. Zhang, H. Shirasaka
12.30	Adaptive hp-version of mortar BEM for two-body contact problems in elasticity. DtN and Uzawa algorithms E. Stephan, A. Chernov	Regularized boundary element method for an inverse elctromagnetic problem with applications to gradient coil design L. Marin, H. Power, R. Bowtell, C. Cobos Sanchez, A. Becker, P. Glover, A. Jones	Transient heat conduction in a medium with circular cavities E. Gordeliy, S. Crouch, S. Mogilevskaya
13.00	Lunch Break		

IABEM 2006 Programme

Room	HS I	HS II	HS VI
Session	Combined Boundary Integral Equations	Special BE Formulations	Time Domain Problems
Chair	Sergej Rjasanow	Euclides Mesquita	Martin Schanz
14.00	Regularized Combined Field Integral Equations R. Hiptmair, A. Buffa	Local integral equation method for orthotropic Reissner-Mindlin plates J. Sladek, V. Sladek, C. Zhang	Coupled Time-Domain Boundary and Finite Element Analysis with Non-conforming Interface Discretisations T. Rüberg, M. Schanz
14.30	Modified Boundary Element Methods for the Helmholtz Equation S. Engleder, O. Steinbach	Computation of stresses in non-homogeneous elastic solids by Local Integral Equation method V. Sladek, J. Sladek, C. Zhang	A Space-Time Boundary Element Method for 3D Elastodynamics J. Zhou, T. Koziara, D. Trevor
15.00	Stable FEM-BEM coupling for Helmholtz transmission problems R. Hiptmair, P. Meury	Application of dual reciprocity BEM coupled with least squares differential quadrature time integration scheme to transient elastodynamic problems C. Bozkaya	Two-dimensional time-domain half-space Green s functions for unsaturated soils E. Jabbari, B. Gatmiri
15.30	New preconditioners for the CFIE equation of electromagnetism D. Levadoux	A Duhamel Integral Approach Based on BEM to 3D Dynamic Soil-structure Interaction Problems A. Pereira, U. Eberwien, W. Moser, G. Beer	The Boundary Element Method Solutions of Diffusion and Scalar Wave Equations using Time-Dependent Fundamental Solutions N. Bozkaya
16.00	Coffee Break		
Session	Hierarchical Matrices	Computational Aspects I	Mechanical Applications I
Chair	Stefan A. Sauter	Sergey E. Mikhailov	Dietmar Gross
16.30	Hybrid Cross Approximation of Integral Operators S. Börm, L. Grasedyck	Finite element calculation of Green's functions D. Duhamel	Boundary element formulation for gradient elastostatics M. Habarta, T. Burczynski
17.00	Stabilization Techniques for Hierarchical Matrices M. Bebendorf, W. Hackbusch	Acceleration of convergence of series expressing Greens functions for Klein-Gordon equation Y. Melnikov, M. Melnikov	Structural Shape Optimisation using the Biological Growth Method and the Boundary Element Method C. Wessel, L. Wrobel, A. Cisilino
17.30	H^2-matrices with variable rank S. Börm	Dual Reciprocity BEM Solution of Grad-Shafranov Equation for the Distribution of Magnetic Flux in Nuclear Fusion Devices S. Aydin	Coupling BIM-FEM for Computation the Behavior of the Electromagnetic Field trough an Aperture of Conducting Enclosure M. Djennah, K. Said, A. Zakia
18.00	An Interface Relaxation Coupling of FEM and ACA accelerated BEM for Incremental Metal Forming R. Grzhibovskis, S. Mader	GPGPU for BEM T. Takahashi	Shear Deformation Effect in Second-Order Analysis of Frames Subjected in Variable Axial Loading by BEM E. Sapountzakis, V. Mokos
19.30	Reception at the Town Hall, Departure: 19.00 from the main entrance of the TU Graz		

IABEM 2006 Programme

Tuesday July 11th

Room	HS I	HS II	HS VI
Session	Boundary Element Analysis: The State of the Art in Theory and Applications II	Fluid Mechanics	Fracture Mechanics I
Chair	Martin Costabel	Matjaž Hriberšek	Alberto Salvadori
9.00	Fast and accurate solution of boundary integral equations S. Rjasanow, O. Steinbach	Deformation of axisymmetric bubbles in potential flow B. Sarler	Boundary Element Simulation of Dynamic Interface Crack Deflection J. Lei, Y. Wang, D. Gross
9.30	Averaging Techniques for BEM D. Praetorius	Migrating and interacting solid particles near a plane fluid-fluid interface A. Sellier, P. Laurentiu	FEM/BEM coupled simulation of 3D crack propagation B. Helldörfer, G. Kuhn
10.00	The error estimates of artificial boundary method for exterior biharmonic problem H. Huang, D. Yu	3-D Boundary Element - Finite Element Method for Viscous Fluid Flow Z. Žunic, M. Hriberšek, L. Skerget, J. Ravnik	A B.E. approach for elasto-damaging fracture mechanics V. Mallardo, C. Alessandri
10.30	Sparse Convolution Quadrature for Time Domain Boundary Integral Formulations of the Wave Equation by Cutoff and Panel Clustering W. Hackbusch, W. Kress, S. Sauter	Double diffusive natural convection in porous media with boundary domain integral method J. Kramer, R. Jecl, L. Skerget	Crack determination with time domain elastodynamic BIEM in laser-ultrasonic non-destructive evaluation problems H. Yoshikawa, N. Nishimura
11.00	Coffee Break		
Session	Fast Methods I	Acoustics	Analysis of Boundary Integral Equations I
Chair	Johannes Tausch	Lothar Gaul	Vladimir Mazya
11.30	Fast multipole boundary element methods in linear elastostatics G. Of, O. Steinbach, W. Wendland	Decay of Multiple-scattering Iterates for Trapping Obstacles in the High-frequency Regime F. Ecevit, F. Reitich	Regularity results to boundary integral equations in composites of metallic and piezoelectric materials A. Sändig, T. Buchukuri, O. Chkadua, D. Natroshvili
12.00	Mechanical System Simulation Using an Accelerated Boundary Element Formulation M. Conry, Z. Andjelic, O. Steinbach	Simulation of SECM-measurements with the boundary element method M. Traeuble, O. Sklyarr, G. Wittstock	Extended Co-normal Derivative Operators and Analysis of Boundary-Domain Integro-Differential Equations on Lipschitz Domains S. Mikhailov
12.30	An FMM for periodic problems in static and time harmonic problems Y. Otani, N. Nishimura	Numerical solution of an unbounded wave guide problems R. Bonet Chaple	Analysis of composites with bridged crack under transient thermal loading M. Perelmuter
13.00	Lunch Break		

IABEM 2006 Programme

Room	HS I	HS II	HS VI
Session	Fast Methods II	Fracture Mechanics II	Scattering Problems
Chair	Reinhold Schneider	Gernot Beer	Naoshi Nishimura
14.00	Fast solution of a boundary variational inequality by combining duality based algorithms with symmetric BEM J. Bouchala, Z. Dostal, M. Sadowska	Dynamic interaction of cracks in piezoelectric materials P. Dineva, D. Gross, T. Rangelov	A robust boundary integral method for high frequency acoustic scattering V. Dominguez, I. Graham, V. Smyshlyaev
14.30	Iterative solution of large-scale boundary integral equations in electromagnetic scattering simulations B. Carpentieri, I. Duff, L. Giraud, G. Sylvand	A 2-D Time-Domain BEM for Dynamic Analysis of Cracked Anisotropic Elastic Solids S. Hirose, J. Sladek, V. Sladek, S. Beyer, C. Zhang	Solution of the Nonlinear Scalar Exterior Wave Equation Using the Dual Reciprocity Boundary Element Method G. Meral
15.00	Multigrid Methods for Boundary Element Equations U. Langer, D. Pusch	Numerical computation of dynamic stress intensity factors in two-dimensional elastic solids with general anisotropy by a time-domain BEM F. Garcia Sanchez, C. Zhang, A. Saez	A high-order algorithm for electromagnetic scattering in three dimensions M. Ganesh, S. Hawkins
15.30	Coffee Break		
Session	Fast Methods III	Mechanical Applications II	Treatment of Singularities
Chair	Mario Bebendorf	Vincenzo Mallardo	Masataka Tanaka
16.00	Fast boundary element simulations of laser-induced melting of nachsehen V. Ajaev, J. Tausch	Numerical simulations of cohesive interface problems via boundary integral equations A. Salvadori	Hyper and Strong Singularities of the Fourier Boundary Element Method F. Duddeck
16.30	Fast HdBNM for prediction of thermal properties of CNT-reinforced composites J. Zhang, M. Tanaka	SBEM macro-elements with sides constrained by springs T. Panzeca, V. Milana, M. Salerno	The Analysis of Corner Singularities in Three Dimensions by the Boundary Element Method J. Watson
17.00	Fast Multipole Algorithm versus ACA in Computational Electromagnetics J. Smajic, B. Cranganu Cretu, Z. Andjelic, M. Bebendorf	Flexural-Torsional Buckling and Vibration Analysis of Composite Beams E. Sapountzakis, G. Tsiatas	Application of different approaches to the corner problem in tunnel excavation U. Eberwien, C. Dünser, G. Beer
17.45	Conference Dinner at the Monastery Rein, Departure by bus from the main entrance of the TU Graz		

IABEM 2006 Programme

Wednesday July 12th

Room	HS I	HS II	HS VI
Session	Computational Electromagnetics	Computational Aspects II	Analysis of Boundary Integral Equations II
Chair	Wolfgang M. Rucker	Vladimir Sladek	Mikhail Perelmuter
9.00	Coupled Finite and Boundary Element Tearing and Interconnecting Solvers for Nonlinear Potential Problems U. Langer, C. Pechstein	Boundary elements on degenerate meshes I. Graham	Boundary element method application to numerical calculation of slow phase transitions O. Kochubey, T. Smolenska, D. Yevdokymov
9.30	Un-symmetric versus Symmetric BEM Formulations of Stationary Current Distribution in Multi-Material Massive Conductors B. Cranganu Cretu, J. Smajic, Z. Andjelic, O. Steinbach	Low-complexity Tensor-product Representation to the Newton Potential in R^d B. Khoromskij, W. Hackbusch	Boundary element calculation of apparent additional mass matrix M. Polyakov, Y. Brazaluk, D. Yevdokymov
10.00	Steps towards the solution of nonlocal electrostatics C. Fasel, O. Steinbach, S. Rjasanow	Numerical Integration Schemes for Petrov-Galerkin Infinite BEM A. Aimi, M. Diligenti	High order regular boundary element method D. Yevdokymov
10.30	Analysis of electric fields and currents in printed circuit boards with boundary element methods A. Buchau, W. Hafla, W. Rucker	Complex variable boundary integral method for linear viscoelasticity Y. Huang, S. Mogilevskaya, S. Crouch	
11.00	Coffee Break		
Session	Analysis of Boundary Integral Equations III	Computational Aspects III	
Chair	Markus Melenk	Fabian Duddeck	
11.30	The boundary element method for almost incompressible elastic materials revisited W. Wendland	Energetic criterion of the error evaluation in the analysis via SGBEM T. Panzeca, S. Terravecchia, L. Zito	
12.00	On prediction and elimination of the non-uniqueness in solving boundary integral equations of the first kind for Dirichlet boundary value problems of plane elasticity R. Vodicka, V. Mantic	Boundary Element Method Solution of Magnetohydrodynamic Flow in a Rectangular Duct with Conducting Walls Parallel to Applied Magnetic Field C. Bozkaya, M. Tezer Sezgin	
12.30	Wavelet compressed boundary element method combined by FEM for planar LES J. Ravnik, L. Skerget, M. Hriberšek	Numerically synthetized displacement and stress solutions for a viscoelastic half-space subjected to a harmonic vertical concentrated load using the Radon and Fourier transforms M. Adolph, E. Mesquita, E. Carvalho, E. Romanini	
13.00	Lunch Break		

Room	HS I
Session	Boundary Element Analysis: The State of the Art in Theory and Applications III
Chair	Ulrich Langer
14.00	Hadamard-type formulae for Greens kernels in singularly perturbed domains V. Mazya, A. Movchan
14.30	Boundary element procedures for elastoplastic contact problems E. Stephan, A. Chernov, S. Geyn, M. Maischak
15.00	A fast boundary integral equation method for elastodynamics in time domain and its parallelisation Y. Otani, T. Takahashi, N. Nishimura
15.30	Inverse acoustic scattering by small-obstacle expansion of misfit function M. Bonnet