# International Conference on
# **Boundary Element & Meshless Techniques XI**
12-14 July 2010
**Maritim Hotel Berlin** Stauffenbergstraße 26,
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| 12th July 2010 | | |
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| **8.30** | **Registration**<br>**Maritim Hotel Berlin**<br>Stauffenbergstraße 26<br>10785 Berlin, Germany<br>Tel.: +49 (0) 30 2065-0<br>Fax: +49 (0) 30 2065-1000 | |
| **9.20** | **Welcome address**<br>**M H Aliabadi and Ch Zhang** | |
| **9.30** | **Keynote Lecture**<br>**Chairman: M Schanz**<br>Meshless boundary element methods for exterior problems on spheroids<br>*E P Stephan, A Costea ,Q T Le Gia, T Tran* | |
| **10.00** | **Break** | |
| | **Session 1A: Stress Analysis**<br>**Chairman: J Sladek** | **Session 1B: Fluids**<br>**Chairman: A J Davies** |
| 10.30 | Study of contact stress evolution on fretting problems using a 3D boundary elements formulation<br>*L Rodriguez-Tembleque, R Abascal* | Blob regularization of boundary integrals<br>*G Baker, H Zhang* |
| 10.50 | Stress analysis of cracked structures considering crack surface contact by the boundary element method<br>*W Weber, K Willner, P Steinmann, G Kuhn* | A Laplace transform boundary element solution for the Cahn-Hilliard equation<br>*A J Davies, D Crann* |
| 11.10 | Computation of moments in thin plates of composite materials under dynamic load using the boundary element method<br>*K R Sousaa, A P Santanaa, E L Albuquerqueb, P Sollero* | Dual reciprocity boundary element formulation applied to the non-linear Darcian diffusive-advective problems<br>*C F Loeffler, F P Neves, P C Oliveira* |
| 11.30 | BEM fracture mechanics analysis of 3D generally anisotropic solids<br>*C L Tan, Y C Shiah, J R Armitage, W C Hsia* | BEM and the Stoke system with a slip boundary condition<br>D Medkova |
| 11.50 | Optimal shape of fibers in composites with various ratios of phase stiffnesses<br>*P P Prochazka* | 3-D Green element method for potential flows<br>*E Nyirenda, A Taigbenu* |
| 12.10 | BEM analysis of dynamic effects of microcracks and inclusions on a main crack<br>*J Lei, Ch Zhang, Q Yang, Y-S Wang* | A meshless boundary interpolation technique for solving the Stokes equations<br>*C Gáspár* |
| **12.30** | **Lunch** | |
| | **Session 2A: Computational Aspects**<br>**Chairman: G Baker** | **Session 2B: Soil and Structural Dynamics**<br>**Chairman: R Abascal** |
| 14.00 | A family of 2D and 3D hybrid finite elements for strain gradient elasticity<br>*N A Dumont, D H Mosqueira* | On the numerical analysis of damage phenomena in saturated porous media<br>*E T Lima Junior, W S Venturini, A Benallal* |
| 14.20 | Anti-plane shear Green's function for an isotropic elastic layer on a substrate with a material surface<br>*W. Q. Chen, Ch Zhang* | A boundary element formulation based on the convolution quadrature method for the quasi-static behaviour analysis of the unsaturated soils<br>*P Maghoul, B Gatmiri, D Duhamel* |
| 14.40 | Genetic algorithm with boundary elements for simultaneous solution of minimum solution of minimum weight and shape optimization problems<br>*Li Chong Lee, Bacelar de Castro, P W Partridge* | A boundary knot method for three-dimensional harmonic viscoelastic problems<br>*B Sensale, A Canelas* |
| 15.00 | Galerkin projection for the potential gradient recovery on the boundary in 2D BEM<br>*V Mantic-Lugo, L J Gray, V Mantic, E Graciani, F Parıs* | Seismic behaviour of structures on elastic footing, BEM-FEM analysis.<br>*S Ciaramella, V Minutolo, E Ruocco* |
| 15.20 | The BEM on general purpose graphics processing units (GPGPU): a study on three distinct implementations<br>*J Labaki, E Mesquita, L O Saraiva Ferreira* | Regularization for a poroelastodynamic collocation BEM<br>M *Messner, M Schanz* |
| **15.40** | **Coffee** | |
| | **Session 3A: MeshFree/Meshless Methods**<br>**Chairman: C L Tan** | **Session 3B: Dynamic Problems**<br>**Chairman: A Saez** |
| 16.00 | Local integral equations combined with mesh free implementations and time stepping techniques for diffusion problems<br>*V Sladek, J Sladek, Ch Zhang* | A new time domain boundary integral equation of elastodynamics (Keynote)<br>*Z H Yao* |
| 16.20 | Fatigue crack growth in functional graded materials by meshless Method<br>*P H Wen, M H Aliabadi* | New boundary integral equations for evaluating the static and dynamic T-stresses,<br>*A.-V. Phan* |
| 16.40 | Meshfree micro-scale modelling and stress analysis of 3D orthogonal woven composites<br>*L Li, P H Wen, M H Aliabadi* | A time-domain BEM for dynamic crack analysis in piezoelectric solids using non-linear crack-face boundary conditions<br>*M Wünsche, Ch Zhang, F García-Sánchez, A Sáez* |

| | Session 3A. | Session 3B |
|---|---|---|
| 17.00 | Nonlinear transient thermo-mechanical analysis of functionally graded materials by an improved meshless radial point interpolation method<br>*A Khosravifard, M R Hematiyan* | Fast bEM for 3-D elastodynamics based on pFFT acceleration technique<br>*Z Yan, J Zhang, W Ye* |
| 17.20 | Adaptive-hybrid meshfree method<br>*Leevan Ling* | Analysis of the dynamic response of deep foundations with inclined piles by a BEM-FEM model<br>*L A Padrón, J J Aznárez, O Maeso, A Santana* |
| 17.40 | A novel boundary meshless method for radiation and scattering problems<br>*Z Fu, W Chen* | Elastodynamic laminate element method for lengthy structures<br>*E V Glushkov, N V Glushkova, A A Eremin* |
| **End of Day One** | | |
| **18.45** | **City Tour** | |

| **13th July 2010** | | |
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| | **Session 4A: Smart Materials/Structures**<br>**Chairman: C Y Dong** | **Session 4B: Computational Aspects**<br>**Chairman: F Hartmann** |
| 9.00 | On the transient response of actively repaired damaged structures by the boundary element method<br>*A Alaimo, G Davì, A Milazzo* | A fast solver for boundary element elastostatic analysis<br>*J O Watson* |
| 9.20 | Hypersingular BEM analysis of semipermeable cracks in magnetoelectroelastic solids<br>*R Rojas-Dıaz, M Denda, F Garcıa-Sanchez, A Saez* | Adaptive cross approximation and its applications<br>*R Grzhibovskis, S Rjasanow* |
| 9.40 | Crack identification in magneto-electro-elastic materials using neural networks and boundary element method<br>G Hattori, A Saez | Incomplete LU preconditioning of BEM systems of equations based upon the generic substructuring algorithm<br>*F C de Araújo, E F d'Azevedo,L J Gray* |
| 10.00 | A Fast BEM for the dynamic analysis of plates with bonded piezoelectric patches<br>*I Benedetti, Z S Khodaei, M H Aliabadi* | On the accuracy of the fast hierarchical DBEM for the analysis of static and dynamic elastic crack problems<br>*I Benedetti, A Alaimo, M H Aliabadi* |
| **10.20** | **Break** | |
| | **Session 5A: Acoustics**<br>**Chairman: W Ye** | **Session 5B: Nonlinear Problems**<br>**Chairman: P Baiz** |
| 10.50 | Fast Multipole Boundary Element Method (FMBEM) for acoustic scattering in coupled fluid-fluidlike problems<br>*V Mallardo, C Alessandri, M H Aliabadi* | The boundary element method applied to visco-plastic analysis<br>*E Pineda, M H Aliabadi, J Zapata* |
| 11.10 | Shape sensitivity analysis of 3-D acoustic problems based on direct differentiation of hypersingular boundary integral formulation<br>*C J Zheng, T Matsumoto, T Takahashi, H B Chen* | Nonlinear analysis of shear deformable beam-columns partially supported on tensionless Winkler foundation<br>*E J Sapountzakis, A E Kampitsis* |
| 11.30 | Efficient solution of acoustic radiation problems by boundary elements and interpolated transfer functions<br>*O von Estorff, O Zalesk* | Three-dimensional thermo-elastoplastic analysis by triple-reciprocity boundary element method<br>*Y Ochiai* |
| 11.50 | Application of convolution quadrature method to electromagnetic acoustic wave analysis<br>*S Hirose, Y Temma, T Saitoh* | Elastoplastic analysis for active macro-zones via multidomain symmetric BEM<br>*T Panzeca, E Parlavecchio, S Terravecchia, L Zito* |
| 12.10 | A Sensitivity formulation for three dimensional active noise control<br>*A Brancatti, M H Aliabadi, V Mallardo* | Nonlinear nonuniform torsional vibrations of shear deformable bars application to torsional postbuckling configurations<br>*E J Sapountzakis, V.J Tsipiras* |
| **12.30** | **Lunch** | |
| | **Session 6A: Acoustics**<br>**Chairman: S Hirose** | **Session 6B: Composite Materials**<br>**Chairman: W Q Chen** |
| 14.00 | Analysis of acoustic wave propagation in a two-dimensional sonic crystal based on the boundary element method<br>*F Li, Y-S Wang, Ch Zhang* | Three-dimensional boundary elements for the analysis of anisotropic solids<br>*F C Buroni, J E Ortiz, A Sáez* |
| 14.20 | Shape optimization with topological derivative and its application to noise barrier for railway viaducts<br>*K Abe, T Fujiu, K Koro* | Three-dimensional eigenstrain formulation of boundary integral equation method for spheroidal particle-reinforced materials<br>*H Ma, Q-H Qin* |
| 14.40 | A D-BEM approach with constant time weighting function applied to the solution of the scalar wave equation<br>*J A M Carrer, W J Mansur* | Boundary integral equations for unsymmetric laminated Composites<br>*C Hwu* |
| 15.00 | Time-Domain boundary element analysis of semicircular hill on viscoelastic media under vertically incident SV wave<br>*A Eslami Haghighat, S A Anvar, M Jahanandish, A Ghahramani* | A BEM analysis of the fibre size effect on the debond growth along the fibre-matrix interface<br>*L Tavara, V Mantic, E Graciani, F Parıs* |
| 15.20 | Harmonic analysis of spatial assembled plate structures coupled with acoustic fluids using the boundary element method<br>*J Useche, E L Albuquerque, S Shoefel* | On the displacement derivatives of the three-dimensional Green's function for generally anisotropic bodies<br>*Y C Shiah, C L Tan, W X Sun, Y H Chen* |

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| **15.40** | **Break** | |
| | **Session 7A: Computational Aspects**<br>**Chairman: N A Dumont** | **Session 7B: Fracture**<br>**Chairman: V Sladek** |
| 16.00 | Iterative optimization methodology for sound scattering using the topological derivative approach and the boundary element method, *A Sisamon, S C Beck, A P Cisilino, S Langer* | Extended stress intensity factors of a three-dimensional crack in electromagnetothermoelastic solid<br>*T Y Qin, X J Li, L N Zhang* |
| 16.20 | Green's functions, boundary elements and finite elements<br>*F Hartmann* | Dynamic analysis of damaged magnetoelectroelastic laminated structures<br>*A Alaimo, A Milazzo, C Orlando* |
| 16.40 | The singular nodal integration method for evaluation of domain integrals in the BEM<br>*M R Hematiyan, A Khosravifard, M Mohammadi* | Analysis of two intersecting three-dimensional cracks<br>*L N Zhang, T Qin, Ch Zhang* |
| 17.00 | Recent developments of radial integration boundary element method in solving nonlinear and nonhomogeneous multi-size problems<br>*X W Gao, M Cui, Ch Zhang* | Coupled thermoelastic analysis for interface crack problems<br>*J Sladek, V Sladek, P Stanak* |
| 17.20 | Reconstruction of elasticity fields in isotropic materials via a relaxation of the alternating procedure<br>*L Marin, B T Johansson* | tba |
| 17.40 | Non-Incremental boundary element discretization of non-linear heat equation based on the use of the proper generalized decompositions<br>*G Bonithon, P Joyot, F Chinesta,P. Villon* | HEDD-FS method for numerical analysis of cracks in 2D finite smart materials<br>*C-Y Fan, G-Tao Xu, M-Hao Zhao* |
| 18.00 | **End of Day Two** | |
| – 19:30 | **Conference Banquet** | |

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| **14th July 2010** | | |
| | **Session 8A: Mathematical Aspects**<br>**Chairman: S Rjasanow** | **Session 8B: Fracture**<br>**Chairman: Z H Yao** |
| 9.00 | On Levi Functions (Keynote)<br>*W L Wendland* | Transient thermoelastic crack analysis in functionally graded materials by a BDEM<br>*A Ekhlakov, O Khay, Ch Zhang* |
| 9.20 | Regularization of the divergent integrals in boundary integral equations<br>V.V. Zozulya | Boundary element analysis of cracked transversely isotropic and inhomogeneous materials<br>*C Y Dong, X Yang, E Pan* |
| 9.40 | Domain integrals in a boundary element algorithm<br>*S Nintcheu Fata, L J Gray* | Stress intensity factor formulas for a rectangular interfacial crack in three-dimensional bimaterials<br>*C-H Xu, T-Y Qin, Ch Zhang, N-A Noda* |
| 10.00 | Strategy for writing general scalable parallel boundary-element codes<br>*F C de Araújo, E F d'Azevedo, L J Gray* | Sensitivity analysis of cracked structures with static and dynamic Green's functions<br>*O Carl, Ch Zhang* |
| | **Session 9A: Plates**<br>**Chairman: V Mantic** | **Session 9B: Computational Aspects**<br>**Chairman: O von Estorff** |
| 10.20 | Drilling rotations in BEM<br>*P Baiz* | Boundary element analysis of uncoupled transient thermo-elasticity involving non-uniform heat sources<br>*M Mohammadi, M R Hematiyan, L Marin* |
| 10.40 | An analysis of elastic plates under concentrated loads by non-singular boundary integral equations<br>*K-C Wu, Z-M Chang* | Solution of hot shape rolling by the local radial basis function collocation method<br>*B Šarler, Siraj-ul-Islam, U Hanoglu* |
| 11.00 | Interaction problems between in-plane and out-plane loaded plates by SBEM.<br>*T Panzeca, F Cucco, A La Mantia, M Salerno* | Two-dimensional viscoelastic fundamental solution for boundary element analysis<br>*J.A.F.Santiago, F.Cezorio, R.F.Oliveria* |
| **End of the Conference** | | |