

# International Conference on Boundary Element Techniques

22-24<sup>th</sup> July 2009  
Athens, Greece

## **Conference Programme**

*Conference Venue: AMARILIA Hotel, 13 Agiou Nikolaou str. 16671  
Vouliagmeni, Athens Greece*



# Day 1: 22<sup>nd</sup> July 2009

8.30	<b>Registration</b>	
<b>Session 1: Keynotes</b> Chairman: Prof. E. Sapountzakis		
9.30	Keynote Speaker: Prof. D.Beskos (paper #1)	
10.00	Keynote Speaker: Prof. J. Katsikadelis (paper #2)	
<b>Break</b>		
	<b>Session 2A: Fluid Flow</b> Chairman: Prof. A.Davies	<b>Session 2B: Stress Analysis</b> Chairman: Prof. D. Beskos
11.00	Paper #71	Paper #10
11.20	Paper #22	Paper #15
11.40	Paper #33	Paper #29
12.00	Paper #52	Paper #16
12.20	Paper #14	Paper #54
<b>Lunch</b>		
	<b>Session 3A: Acoustic</b> Chairman: Prof. A.Sellier	<b>Session 3B: Computational Aspects</b> Chairman: Prof. J. Katsikadelis
14.00	Paper #5	Paper #17
14.20	Paper #21	Paper #24
14.40	Paper #27	Paper #48
15.00	Paper #62	Paper #50
<b>Break</b>		
	<b>Session 4A: Computational Aspects</b> Chairman: Prof. R Gallego	<b>Session 4B: Soil Dynamics</b> Chairman: Prof. B. Gatmiri
15.50	Paper #69	Paper #36
16.10	Paper #38	Paper #55
16.30	Paper #42	Paper #37
16.50	Paper #40	Paper #23

## Day 2: 23<sup>rd</sup> July 2009

	<b>Session 5A: New Formulations</b> Chairman: Prof. G.Baker	<b>Session 5B: Plates &amp; Shells</b> Chairman: Prof. Venturini
9.00	Paper #7	Paper #4
9.20	Paper #32	Paper #30
9.40	Paper #31	Paper #20
10.00	Paper #25	Paper #9
<b>Break</b>		
	<b>Session 6A: Solutions Techniques/Contact Mechanics</b> Chairman: Prof. J.Sladek	<b>Session 6B: Structures</b> Chairman: Prof. M.S. Nerantzaki
10.50	Paper #3	Paper #58
11.10	Paper #43	Paper #12
11.30	Paper #60	Paper #11
11.50	Paper #63	Paper #45
12.10	Paper #19	Paper #46
<b>Lunch</b>		
	<b>Session 7A: Composites</b> Chairman: Prof. P. Prochazka	<b>Session 7B: Fracture</b> Chairman: Dr P.Baiz
14.00	Paper #6	Paper #8
14.20	Paper #34	Paper #26
14.40	Paper #41	Paper #66
15.00	Paper #59	Paper #70
<b>Break</b>		
	<b>Session 8A: Computational Aspects</b> Chairman: Prof. L.Marin	<b>Session 8B: Fracture</b> Chairman: Prof. Cisilino
15.50	Paper #18	Paper #56
16.10	Paper #44	Paper #57
16.30	Paper #51	Paper #65
16.50	Paper #53	Paper #67

19.00 Bus leaves for Conference Banquet (**last date for booking is 15<sup>th</sup> July**).

## Day 3: 24<sup>th</sup> July 2009

<b>Session 9 :Keynote</b> Chairman: Prof. Ferri Aliabadi	
9.00	Keynote Speaker: Prof. M. Schanz (Paper #35)
	<b>Session 10: New Formulations and Computational Aspects</b> Chairman: Prof. V.Mallardo
9.30	Paper #28
9.50	Paper #68
10.10	Paper #49
10.30	Paper #47
10.50	Paper #13
11.10	Paper #39
11.30	Paper #64
<b>Bus leaves for Excursion to Acropolis</b>	

Title/Author	Paper no.
<b>Boundary element analysis of 2-D and 3-D cracks in gradient elastic solids</b> <i>G.F. Karlis, S.V. Tsinopoulos, D. Polyzos, D. E. Beskos</i>	1
<b>Nonlinear vibrations of viscoelastic membranes of fractional derivative type</b> <i>J.T. Katsikadelis</i>	2
<b>Fast solution of 3D elastodynamic boundary element problems by hierarchical matrices</b> <i>I. Benedetti, M.H. Aliabadi</i>	3
<b>The BEM for optimum design of plates</b> <i>N.G. Babouskos, J.T. Katsikadelis</i>	4
<b>Rapid acoustic boundary element method for solution of 3D problems using hierarchical adaptive cross approximation GMRES approach</b> <i>A. Brancati, M. H. Aliabadi, I. Benedetti</i>	5
<b>Analysis of composite bonded joints using the 3D boundary element method</b> <i>C.A.O.Souza, P. Sollero, A.G.Santiago, E.L. Albuquerque</i>	6
<b>Conceptual Completion of the simplified hybrid boundary element method</b> <i>M.F. F. de Oliveira, N A. Dumont</i>	7
<b>Enrichment of the boundary element method through the partition of unity method for mode I and II fracture analysis</b> <i>R. Simpson, J. Trevelyan</i>	8
<b>Fracture mechanics analysis of multilayer metallic laminates by BEM</b> <i>P. M. Baiz, Z. Sharif Khodaei, M. H. Aliabadi</i>	9
<b>Warping shear stresses in nonlinear nonuniform torsional vibrations of bars by BEM</b> <i>E.J. Sapountzakis, V.J. Tsipiras</i>	10
<b>Secondary torsional moment deformation effect by BEM</b> <i>E.J. Sapountzakis, V.G. Mokos</i>	11
<b>Lateral buckling analysis of beams of arbitrary cross section by BEM</b> <i>E.J. Sapountzakis, J.A. Dourakopoulos</i>	12
<b>Flexural - torsional nonlinear analysis of Timoshenko beams of arbitrary cross section by BEM</b> <i>E.J. Sapountzakis, J.A. Dourakopoulos</i>	13
<b>A modified boundary integral equation method for filtration problem</b> <i>S. Khabthani, A. Sellier, L. Elasm, F.Feuillebois</i>	14
<b>Linear bending analysis of stiffened plates with different materials by the boundary element method</b> <i>G.R. Fernandes</i>	15
<b>Dynamics of free hexagons based on BEM</b> <i>P. Prochazka</i>	16
<b>Analysis of radial basis functions in BEM-AEM for non-homogeneous bodies</b> <i>M.A. Riveiro, R. Gallego</i>	17
<b>Topological sensitivity analysis in 3D time-harmonic dynamics in a viscoelastic layer</b> <i>A.E. Martínez-Castro, I.H. Faris, R. Gallego</i>	18
<b>Wear prediction in tribometers using a 3D Boundary Elements formulation</b> <i>L. Rodriguez-Tembleque, R. Abascal, M.H. Aliabadi</i>	19
<b>The meshless analog equation method for the buckling of plates with variable thickness</b> <i>A.J. Yiotis, J.T. Katsikadelis</i>	20
<b>Large-scale multiple scattering analysis of SH waves using time-domain FMBEM</b> <i>T. Saitoh, Ch. Zhang, S. Hirose, T. Fukui</i>	21
<b>BEM for shallow water</b> <i>Gregory Baker, Jeong-Sook Im</i>	22
<b>Influence of infill walls in the dynamic response of buildings via a boundary element modeling</b> <i>N.P. Bakas, N.G. Babouskos, F.T. Kokkinos, J.T. Katsikadelis</i>	23
<b>Radial integration BEM for nonlinear heat conduction and stress analysis of</b>	24

<b>thermal protection systems</b> <i>Xiao-Wei Gao, Jing Wang, Ch. Zhang</i>	
<b>BEM formulation to analyze non-saturated porous media</b> <i>W.W. Wutzow, A.Benallal, W.S.Venturini</i>	25
<b>Implementation of a symmetric boundary integral formulation for cohesive cracks in homogeneous media and at interfaces</b> <i>L. Tavora, V. Mantic, A. Salvadori, L. J. Gray, F. Paris</i>	26
<b>A fast multipole boundary element method for two-dimensional acoustic wave problems</b> <i>V. Mallardo, M. H. Aliabadi</i>	27
<b>Nonlinear analysis of non-uniform beams on nonlinear elastic foundation</b> <i>G.C. Tsiatas</i>	28
<b>A BEM solution to the Saint-Venant torsion problem of micro-bars</b> <i>G.C. Tsiatas, J.T. Katsikadelis</i>	29
<b>A multidomain approach of the SBEM in the plate bending analysis</b> <i>T.Panzeca, A. La Mantia, M. Salerno, M.S.Terravecchia</i>	30
<b>Elastoplastic analysis by the Multidomain Symmetric Boundary Element Method</b> <i>T.Panzeca, F. Cucco, E. Parlavecchio, L. Zito</i>	31
<b>A boundary element model for nonlinear viscoelasticity</b> <i>S. Syngellakis and Jiangwei Wu</i>	32
<b>A non-linear BEM for surface-piercing hydrofoils</b> <i>Vimal Vinayan, Spyros A. Kinnas</i>	33
<b>On the effective elastic properties of composite medium by BEM</b> <i>S. Parvanova, G. Gospodinov</i>	34
<b>Fast time dependent boundary element method based on ACA and the convolution quadrature method</b> <i>M. Schanz, M. Messner</i>	35
<b>Boundary integral equations in frequency domain for the dynamic behaviour analysis of unsaturated soils</b> <i>P. Maghoul, B. Gatmiri, D. Du</i>	36
<b>The response of an elastic half-space with circular trenches around a rigid surface foundation subjected to dynamic horizontal loads</b> <i>P.L. de Almeida Barros and E. Mesquita</i>	37
<b>The method of fundamental solutions applied to linear elasticity with the use of a genetic algorithm</b> <i>Li Chong Lee, B. de Castro, G. C. Medeiros and P.W. Partridge</i>	38
<b>Boundary hypersingular integral equations in heat transfer problem of 2D cracked body</b> <i>O. Zaydenvarg, E. Strelnikova,</i>	39
<b>Hybrid finite/boundary element formulation for strain gradient elasticity problems</b> <i>N.A. Dumont and D.H. Mosqueira</i>	40
<b>3D analysis of thick functionally graded inhomogeneous anisotropic plates</b> <i>M.S. Nerantzaki</i>	41
<b>A general method for coupling of analytical, boundary element and other numerical methods with each other</b> <i>M. R. Hematiyan, A. Khosravifard, H. Bagheri</i>	42
<b>Practical matrix compression strategies and their properties for cost reduction in wavelet BEM</b> <i>K.Bargi, M. Hooshmand</i>	43
<b>Strong discontinuity analysis in solid mechanics using boundary element method</b> <i>Oswaldo L.Manzoli, Rafe I A.A.Pedrin and W.S.Venturini</i>	44
<b>A linear elastic BE formulation for the analysis if masonry walls</b> <i>L. de Oliveira Neto, M.J. Masia</i>	45
<b>A BE formulation for non-linear analysis of clay brick masonry walls</b> <i>L. de Oliveira Neto, A. S. Botta; F. Sanches Jr., M.J. Masia</i>	46
<b>Drop deformation and interaction in converging channels</b> <i>L.C. Wrobel and D. Soares Jr</i>	47
<b>Minimal error-boundary element solution to inverse boundary value problems in two-dimensional linear elasticity</b> <i>L.Marin</i>	48
<b>2D non-orthogonal spline wavelets and Beylkin-type compression algorithm for 3D boundary elements method</b>	49

<i>M. Hooshmand, K. Bargi</i>	
<b>Local errors in the constant and linear Boundary Element Method for potential problems</b>	<b>50</b>
<i>G. Kakuba, R. M. M. Mattheij</i>	
<b>Time-domain analysis of elastodynamic models meshless local Petrov-Galerkin formulations</b>	<b>51</b>
<i>D. Soares Jr., J. Sladek, V. Sladek</i>	
<b>A BEM code for the calculation of flow around systems of independently moving bodies including free shear layer dynamics.</b>	<b>52</b>
<i>G.K. Politis</i>	
<b>Three Dimensional BEM Anisotropic Stress Analysis of Bicrystals</b>	<b>53</b>
<i>Y.C. Shiah, C.L. Tan, Y.H. Chen</i>	
<b>Relativistic mechanics for airframes applied in aeronautical technologies</b>	<b>54</b>
<i>E.G. Ladopoulos</i>	
<b>BEM based dynamic response of soil profiles applied to the analysis of a rotor foundation-soil system</b>	<b>55</b>
<i>R. Carrion, E. Mesquita, K. Cavalca, Amílcar D. O. Sou</i>	
<b>Time-dependent fracture problems in creeping materials applying the BEM</b>	<b>56</b>
<i>E. Pineda, M.H. Aliabadi</i>	
<b>A BDEM for transient thermoelastic analysis of functionally graded materials under thermal shock</b>	<b>57</b>
<i>A. Ekhlakov, O. Khay, Ch. Zhang and X.W. Gao</i>	
<b>Further developments on the boundary element method applied to orthotropic shear deformable plates</b>	<b>58</b>
<i>A. R. Gouvea, E. L. Albuquerque, L. Palermo Jr.</i>	
<b>A dynamic formulation of the boundary element method for transient analysis of laminated composite thin plates</b>	<b>59</b>
<i>A. P. Santana, K. R. Sousa, E. L. Albuquerque, P. Sollero</i>	
<b>Improving BEM solvers: the proper generalized decomposition boundary element method for solving parabolic problems</b>	<b>60</b>
<i>G. Bonithon, P. Joyot, F. Chinesta, P. Villon</i>	
<b>Boundary element analysis of crack propagation path on anisotropic marble</b>	<b>61</b>
<i>Chien-Chung Ke, Shih-Meng Hsu, Chao-Shi Chen, Shu-Yeong Chi</i>	
<b>New numerical comparisons with dual reciprocity boundary element formulation applied to scalar wave propagation problems</b>	<b>62</b>
<i>C.F.Loeffler, J.C.Sessa, G.A.V. Castillo</i>	
<b>Small-displacement contact problems where non-conforming algorithms are needed</b>	<b>63</b>
<i>A. Blázquez, F. París</i>	
<b>Boundary element analysis of fatigue crack growth under thermal cycling</b>	<b>64</b>
<i>L. K. Keppas and N.K Anifantis</i>	
<b>Recent developments on 3D BEM for hyperbolic problems</b>	<b>65</b>
<i>A. Temponi, A. Salvadori, A. Carini, F. Mordenti, P. Pelizzari, E. Bosco</i>	
<b>A time-domain collocation Galerkin BEM for 2D dynamic crack problems in piezoelectric solids</b>	<b>66</b>
<i>M. Wünsche, F. García-Sánchez, A. Sáez, Ch. Zhang</i>	
<b>BE contact analysis of delamination cracks actively repaired through piezoelectric active patches</b>	<b>67</b>
<i>A. Alaimo, G. Davì, C. Orlando</i>	
<b>Dynamic analysis of piezoelectric structures by the displacement boundary method</b>	<b>68</b>
<i>I. Benedetti, A. Milazzo, C. Orlando</i>	
<b>On Laplace transform time-domain decomposition for dual reciprocity solution of diffusion problems</b>	<b>69</b>
<i>A. J. Davies, D. Crann</i>	
<b>Three-dimensional BEM analysis of interface cracks in transversely isotropic bimetals</b>	<b>70</b>
<i>N.O. Larrosa, J.E. Ortiz, A.P. Cisilino</i>	
<b>Regularized boundary-integral equations for creeping-flow problems involving arbitrary cluster of spherical droplets</b>	<b>71</b>
<i>A. Sellier</i>	

**International Conference  
on  
Boundary Element Techniques X  
22-24 July 2009, Athens, Greece**

**Organising Committee:**

**Assoc. Professor Evangelos J. Sapountzakis,**  
Institute of Structural Analysis and Aseismic Research  
School of Civil Engineering  
National Technical University of Athens  
Zografou Campus Gr-15780  
Athens, GREECE

**Professor Ferri M.H. Aliabadi**  
Department of Aeronautics  
Imperial College London  
South Kensington  
London, SW7 2BY, UK

**International Scientific Advisory Committee**

Abascal,R (Spain)	Perez Gavilan, J J (Mexico)
Abe,K (Japan)	Prochazka,P (Czech Republic)
Baker,G (USA)	Polyzos, D (Greece)
Baiz,P (UK)	Saez,A (Spain)
Blasquez,A (Spain)	Salvadori, A (Italy)
Carpentieri,B (Austria)	Schneider,S (France)
Cisilino,A (Argentina)	Sellier,A (France)
Davies,A (UK)	Sladek,J (Slovakia)
Denda,M (USA)	Sollero.P. (Brazil)
Fedelinski,P (Poland)	Song, C (Australia)
Frangi,A (Italy)	Taigbenu,A (South Africa)
Gatmiri,B (France)	Tan,C.L (Canada)
Gallego,R (Spain)	Tanaka,M (Japan)
Gray,L (USA)	Telles,J.C.F. (Brazil)
Gospodinov,G (Bulgaria)	Venturini,W.S. (Brazil)
Gumerov,N (USA)	Wen,P.H. (UK)
Hirose, S (Japan)	Wrobel,L.C. (UK)
Kinnas,S (USA)	Yao,Z (China)
Lee,S.S. (Korea)	Zhang,Ch. (Germany)
Lesnic,D (UK)	Zhong,Z (China)
Mallardo,V (Italy)	
Manolis,G (Greece)	
Mansur, W. J (Brazil)	
Mantic,V (Spain)	
Marin, L (Romania)	
Matsumoto, T (Japan)	
Mattheij, R.M.M (The Netherlands)	
Meral,G (Turkey)	
Mesquita,E (Brazil)	
Millazo, A (Italy)	
Minutolo,V (Italy)	
Mohamad Ibrahim,M.N. (Malaysia)	
Ochiai,Y (Japan)	