

# Cockcroft Institute

Seminar on the Boundary Integral Equation Method for Partial Differential Equations

by Prof. J.T. Katsikadelis

7-9 January 2008

Literature related to the lectures

## Part A

- [1] Katsikadelis J.T. (2002). *Boundary Elements: Theory and Applications*, Elsevier, London.
- [2] Greenberg, M., 1971. *Application of Green's Functions in Science and Engineering*, Prentice Hall, Englewood Cliff, New Jersey
- [3] Roach, G.F., 1970. *Green's Functions*, Van Nostrand Reinhold Company, London.
- [4a] Katsikadelis J.T. and Kallivokas L. (1986). Clamped Plates on Pasternak-type Elastic Foundation by the Boundary Element Method. *ASME, J. of Appl. Mech.*, Vol. 53, pp. 909-917
- [4b] Katsikadelis J.T. and Kallivokas L. (1988). Plates on Biparametric Elastic Foundation by BDIE Method. *ASCE, Journal of Engineering Mechanics*, Vol.114, No5, pp.847-875.
- [5] Katsikadelis J.T. and Sapountzakis E.J. (1986). Numerical Evaluation of the Green Function for the Laplace Equation with Applications to Linear and Non-Linear Potential Problems by the Boundary Element Method", *Proc. of 3rd International Conference on Computational methods and Experimental Measurements*, Porto Carras, Greece, Sept. 2-5, Springer, Berlin, pp. 877-890.
- [6] Katsikadelis J.T. and Sapountzakis E.J. (1987). Numerical Evaluation of the Green Function for the Biharmonic Equation Using BEM with Applications to Static and Dynamic Analysis of Plates, In: Brebbia C.A. et al. (eds), *Boundary Elements IX*, Vol. 2, 51-67, Springer, Berlin.
- [7] Nerantzaki M.S. and Katsikadelis J.T. (1988). A Green's Function Method for Nonlinear Analysis of Plates. *Acta Mechanica*, 75, 211-225.
- [8] Kansa, E.J., (1990). Multiquadrics– A Scattered Data Approximation Scheme with Applications to Computational Fluid Dynamics– II: Solution to Parabolic, Hyperbolic and Elliptic Partial Differential Equations. *Comp. Mech. and Appl.*, 19, 149-161,
- [9] Partridge P. W., Brebbia C. A. and Wrobel L.C. (1992). *The Dual Reciprocity Boundary Element Method*, Computational Mechanics Publications, Southampton.
- [10] Katsikadelis J.T. and Nerantzaki M.S. (1999). The Boundary Element Method for Nonlinear Problems, *Engineering Analysis with Boundary Elements*, 23, 363.

## Part B

- [11] Katsikadelis J.T. (1994). The Analog Equation Method - a Powerful BEM-based Solution Technique for Solving Linear and Nonlinear Engineering Problems, In: Brebbia C.A (ed.), *Boundary Element Method XVI*, 167-182, Computational Mechanics Publications.
- [12] Katsikadelis J.T. (2005). The BEM for Non-homogeneous Bodies, *Archive of Applied Mechanics*, **74**, 780-789.
- [13] Katsikadelis J.T. (2007). A Generalized Ritz Method for Partial Differential Equations In Domains of Arbitrary Geometry Using Global Shape Functions, *Engineering Analysis with Boundary Elements*, (on line)
- [14] Katsikadelis J.T. and Nerantzaki, M.S. (2001). A Boundary Element Solution to the Soap Bubble, Problem, *Computational Mechanics*, **27**(2) 154-159.

- [15] Katsikadelis J.T., Nerantzaki M.S. and Tsiatas G.C. (2001). The Analog Equation Method for Large Deflection Analysis of Membranes. A Boundary Only Solution, *Computational Mechanics*, **27**, 513-523.
- [16] Katsikadelis J.T. and Tsiatas C.G., (2001) "The Analog Equation Method for Large deflection Analysis of Heterogeneous Orthotropic Membrane", A Boundary-only Solution, *Engineering Analysis with Boundary Elements*, **25**(8) 655-667
- [17] Katsikadelis J.T. and Nerantzaki M. (2002). The Ponding Problem on Membranes. An Analog Equation Solution, *Computational Mechanics*, **8**, 122-128.
- [18] Nerantzaki M. and Katsikadelis J.T. (2003). The Ponding on Floating Membranes, *Engineering Analysis with Boundary Elements*, **27**, 589-596.
- [19] Tsiatas G.C. and Katsikadelis J.T. (2005). Large Deflection Analysis of Elastic Space Membranes, *International Journal for numerical Methods in Engineering*, **65**, 264-294.
- [20] Katsikadelis J.T. and Babouskos N. (2007). A BEM based Meshless Variational Method for Solving Linear and Nonlinear Plate Problems, *Proc. First Serbian (26th YU) Congress on Theoretical and Applied Mechanics*, Kopaonik, Serbia, April 10-13, 463-474.
- [21] Beskos, D.E. (1991), (ed.). *Boundary Element Analysis of Plates and Shells*, Springer-Verlag, Berlin.
- [22] Chinnaboon B., Katsikadelis J.T. and Chucheepsakul S. (2007). A BEM-based Meshless Method for Plates on Biparametric Elastic Foundation, *Computer Methods in Applied Mechanics and Engineering*, **196**(33-34) 3165-3177.
- [23] Chinnaboon, B., Chucheepsakul S. and **Katsikadelis, J.T.** (2007). A BEM-based Meshless Method for Buckling Analysis of Elastic Plates with Various Boundary Conditions", *International Journal of Structural Stability and Dynamics*, **1**(1), 81-89.

### Part C

- [24] Katsikadelis J.T. and Babouskos N. (2007). Post-buckling Analysis of plates. A BEM based Meshless variational Solution, *Proc. 8th HSTAM International Congress on Mechanics*, Patras, Greece, 12 – 14 July, Vol I, 177-184
- [25] Katsikadelis J.T. and Nerantzaki M.S. (2000). A Boundary-only Solution to Dynamic Analysis of Non-homogenous Elastic Membranes, *Computer Modeling in Engineering & Sciences*, **1**(3) 1-9.
- [26] Katsikadelis J.T. and Tsiatas C.G. (2003). Nonlinear Dynamic Analysis of Heterogeneous Orthotropic Membranes, *Engineering Analysis with Boundary Elements*, **27**, 115-124.
- [27] Katsikadelis J.T. and Babouskos N. (2007). Flutter Instability of Damped Plates under Conservative and Nonconservative Loads, *6th German-Greek-Polish Symposium, "Recent Advances in Mechanics"*, September 17-21, Alexandroupolis, Greece, Book of Abstracts, 101-102.
- [28] Nerantzaki M.S. and Katsikadelis J.T. (1996). An Analog Equation Solution to Dynamic Analysis of Plates with Variable Thickness, *Engineering Analysis with Boundary Elements*, **17**, 145-152.
- [29] Katsikadelis J.T. and Yiotis A.J. (2003). The BEM for Plates of Variable Thickness on Nonlinear Biparametric Elastic Foundation. An Analog Equation Solution, *Journal for Engineering Mathematics*, **46**, 313-330
- [30] Yiotis A.J. and Katsikadelis J.T. (2000). Static and Dynamic Analysis of Shell Panels Using the Analog Equation Method, *Computer Modeling in Engineering & Sciences*, **1**(2) 95-104.

### Part D

- [31] Katsikadelis J.T. and Tsiatas G.C. (2005). Buckling Load Optimization of Beams, *Archive of Applied Mechanics*, **74**, 790-799.
- [32] Nerantzaki M.S. and Katsikadelis J.T. (2003). Large Deflections of Axisymmetric Circular Plates with Variable Thickness, *International Journal for Computational Civil and Structural Engineering*, **1**(5) 75-83.

- [33] Katsikadelis J.T. and Tsiatas G.C. (2006). Regulating the Vibratory Motion of Beams using shape optimization, *Journal Sound and Vibration*, **292**, 390-401.
- [44] Katsikadelis J.T. and Tsiatas G.C. (2007). Optimum design of structures subjected to follower forces, *Int. Journal of Mechanical Sciences*, **49**, 1204, 1212.
- [35] Katsikadelis J.T. and Tsiatas C.G. (2004). Nonlinear Dynamic Analysis of Beams with Variable Stiffness, *Journal of Sound and Vibration*, **270**, 847-863.
- [36] Nerantzaki M.S. and Katsikadelis J.T. (2006). Nonlinear Dynamic Analysis of Circular Plates with Varying Thickness, *Archive of Applied Mechanics*, **77** (6), 381-391.
- [37] Katsikadelis J.T. and Tsiatas G.C. (2007). Nonlinear Dynamic Stability of Damped Beck's Column with Variable Cross-section, *International Journal of Nonlinear Mechanics*, **42**(1) 164-171.

#### **Part E**

- [38] Katsikadelis J.T. (2006) "The meshless analog equation method. A new highly accurate truly mesh-free method for solving partial differential equations", In: Brebbia C.A. and Katsikadelis J.T. (eds), *Boundary Elements and other Mesh reduction Methods XXVIII*, 13-22, WITPRESS, Southampton.
- [39] Katsikadelis J.T. "The 2D Elastostatic Problem in Inhomogeneous Anisotropic Bodies by the Meshless Analog Equation Method", *Engineering Analysis with Boundary Elements*, (accepted).
- [40] Katsikadelis J.T. and Platanidi J. (2007). 3D Analysis of Thick Shells by the Meshless Analog Equation Method (MAEM), *Proc. First Serbian (26th YU) Congress on Theoretical and Applied Mechanics*, Kopaonik, Serbia, April 10-13, 475-484.