Distinguished Professor
Department of Harbor and River Engineering
National Taiwan Ocean University
Keelung 202
Taiwan
Tel: +886-2-2462-2192 ext. 6140 or 6177
Fax: +886-2-24632375
Email: jtchen@mail.ntou.edu.tw
URL: http://ind.ntou.edu.tw/~msvlab

Education

Ph.D., Department of Civil Engineering, National Taiwan University (1994)
M.S. , Institute of Applied Mechanics, National Taiwan University (1986)
B.S. , Department of Civil Engineering, National Taiwan University (1984)

Current Position and Relevant Experience

2004,9 ~ present	Distinguished Professor, Department of Harbor and River Engineering, National Taiwan Ocean University
1998,8 ~ 2004,8	Professor, Department of Harbor and River Engineering, National Taiwan Ocean University
1994,8 ~ 1998,7	Associate Professor, Department of Harbor and River Engineering, National Taiwan Ocean University
1990,9 ~ 1994,6	Ph.D Graduate Student, Department of Civil Engineering, National Taiwan University
1986,8 ~ 1990,8	Research Engineer, Stress Analysis Group of Structure Section, Missile & Rocket Systems Research Division, Chung Shan Institute of Science and Technology, Lung-Tan, Taiwan.
1983,6 ~ 1983,9	Assistant Editor, Sho-Yuan Publisher, Tapei, Taiwan, R.O.C.
1982,6 ~ 1982,9	Mathematics Teacher of Mato Junior School, Mato, Taiwan, R.O.C.

Fields of Specialty

- Vibration and Acoustics
- Structural Analysis
- FEM, BEM and meshless method
- Inverse problem
- Damping and control
- Aging Evaluation
- Fracture & Fatigue
- MSC/NASTRAN, ABAQUS, ANSYS, BEASY-CRACK, SDRC I-DEAS, CADKEY, MATHEMATICA, MACSYMA
- Solid Propellant Analysis
- Aerodynamics
- MEMS simulation

Major Awards and Honors

• Distinguished Alumnus of NTU (2005)
• Distinguished Professor of National Taiwan Ocean University (2004 ~ 2007)
• Outstanding Research Award of NSF Taiwan (1999 ~ 2001)
• Outstanding Research Award of NSF Taiwan (2002 ~ 2005)
• Wu Ta-You Research Award (2002 ~ 2005)
• Best teacher award of NTOU (2001)
• Paper award of the best presentation of MSC TUC95 Conference (1995)
• Paper award of 16th National Conference on Theoretical and Applied Mechanics (1992)
• Book award of Ministry of Education of R.O.C. (1992)
— MSC/NASTRAN Primer and Applications (in Chinese)
— Boundary Element Mthod (in Chinese)
• Advisor Award of student paper competition in Conference of Computer Applications (2000, I. L. Chen)
• Advisor Award of student paper competition in Conference of Mechanics (2002, Y. T. Lee)
• Advisor Award of student paper competition in Conference of Mechanics (2003, C. S. Wu)
• Advisor Award of NSF-Taiwan Master Thesis (2004, S. Y. Lin)

Publications & Presentations

Over 80 papers in SCI journals and 160 papers in conference proceedings.
More than 50 invited presentations given in universities in Taiwan and abroad as well as in international conferences.
Plenary lectures (2), Keynote lectures (6) and Invited lectures (7).

Integrated Research Projects

Computational micromechanics methods for characterizing of effective properties and the strength of materials, Taiwan-Russia joint project (2005~2008)

PUBLICATIONS (SELECTED LIST)

1. J. T. Chen, C. S. Wu and K. H. Chen, 2005, A study of free terms for plate problems in the dual boundary integral equations, Engineering Analysis with Boundary Elements, Accepted.
2. J. T. Chen, I. L. Chen and K. H. Chen, 2005, A unified formulation for the spurious and fictitious frequencies in acoustics using the singular value decomposition and Fredholm alternative theorem, J. Comp. Acoustics, Accepted.
3. J. T. Chen, C. S. Wu, Y. T. Lee and K. H. Chen, 2005, On the equivalence of the Trefftz method and method of fundamental solutions for Laplace and biharmonic equations, Computers and Mathematics with Applications, Accepted.
4. J. T. Chen and C. S. Wu, 2005, Alternative derivations for the Poisson integral formula, Int. J. Math. Edu. Sci. Tech, Revised.
5. K. H. Chen and J. T. Chen, 2005, Adaptive dual boundary element method for solving oblique incident wave passing a submerged breakwater, Computer Methods in Applied Mechanics and Engineering, Revised.
6. J. T. Chen, C. S. Wu, K. H. Chen and Y. T. Lee, 2005, Degenerate scale for plate analysis using the boundary integral equations, Computational Mechanics, Revised.
7. J. T. Chen, S. Y. Lin, I. L. Chen and Y. T. Lee, 2005, Mathematical analysis and numerical study for free vibration of annular plates using BIEM and BEM, Int. J. Numer. Meth. Engng., Revised.
8. J. T. Chen, S. Y. Lin, I. L. Chen and Y. T. Lee, 2005, Mathematical analysis and numerical study of true and spurious eigenequations for free vibration of plates using imaginary-part BEM, Submitted..
9. J. T. Chen, S. R. Lin and K. H. Chen, 2005, Degenerate scale for Laplace equation using the dual BEM, Int. J. Numer. Meth. Engng., Vol.62, No.2, pp.233-261. (SCI and EI)
10. J. T. Chen, T. W. Lin, I. L. Chen and Y. J. Lee, 2005, Fictitious frequency for the exterior Helmholtz equation subject to the mixed-type boundary condition using BEM, Mechanics Research Communications, Vol.32, No.1, pp.75-92.
11. J. T. Chen, I. L. Chen and Y. T. Lee, 2005, Eigensolutions of multiply-connected membranes using method of fundamental solution, Engineering Analysis with Boundary Elements, Vol.29, No.2, pp.166-174.
12. Y. S. Liao, S. W. Chyuan and J. T. Chen, 2005, Computational study of the effect of finger width and aspect ratios for the electrostatic levitating force of MEMS combdrive, IEEE Journal of Microelectromechanical System, Vol.14, No.2..
13. Y. S. Liao, S. W. Chyuan and J. T. Chen, 2004, Numerical studies of variations in gap & finger with width ratio and traveled distance for the MEMS device, J. Mechanical Engineering Science, Proceedings of the Institution of Mechanical Engineers Part C, Vol.218, No.10, pp.1243-1253.
14. Y. S. Liao, S. W. Chyuan and J. T. Chen, 2004, Efficaciously modeling the exterior electrostatic problems with singularity for electron devices, IEEE Circuits & Devices, Vol.20, No.5, pp.25-34.
15. Y. S. Liao, S. W. Chyuan and J. T. Chen, 2004, Computational study of variations in gap size for the electrostatic levitating force of MEMS combdrive, Microelectronics Journal, Vol.35, pp.739-748.
16. Y. S. Liao, S. W. Chyuan and J. T. Chen, 2004, An efficient technique for solving the arbitrarily

multilayered electrostatic problems with singularity arising from degenerate boundary, Semiconductor Science Technology, Vol.19, R47-58, 2004.

17. K. H. Chen, J. T. Chen, S. Y. Lin and Y. T. Lee, 2004, Dual boundary element analysis of normal incident wave passing a thin submerged breakwater with rigid, absorbing and permeable boundaries, Journal of Waterway, Port, Coastal and Ocean Engineering, ASCE, Vol.130, No.4, pp.179-190. (SCI and EI)
18. Y. S. Liao, S. W. Chyuan and J. T. Chen, 2004, An alternatively efficient method for simulating the electrostatic field and levitating force of MEMS combdrive, J. Micromechanics and Microengineering, Vol.14, No.8, pp.1258-1269.
19. J. T. Chen, Y. T. Lee, I. L. Chen and K. H. Chen, 2004, Mathematical analysis and treatment for the true and spurious eigenequations of circular plates in the meshless method using radial basis function, J. Chinese Institute of Engineers, Vol.27, No.4, pp.547-561.
20. J. T. Chen, T. W. Lin, K. H. Chen and S. W. Chyuan, 2004, True and spurious eigensolutions for the problems with the mixed-type boundary conditions using BEMs, Finite Elements in Analysis and Design, Vol.40, No.11, pp.1521-1549.
21. J. T. Chen, I. L. Chen. K. H. Chen, Y. T. Yeh and Y. T. Lee, 2004, A meshless method for free vibration of arbitrarily shaped plates with clamped boundaries using radial basis function, Engineering Analysis with Boundary Elements, Vol.28, No.5, pp.535-545. (SCI and EI)
22. J. T. Chen, L. W. Liu and S. W. Chyuan, 2004, Acoustic eigenanalysis of multiply-connected problems, Comm. Num. Meth. Engng., Vol.20, pp.419-440. (SCI and EI)
23. J. T. Chen, and K. H. Chen, 2004, Applications of the dual integral formulation in conjunction with fast multipole method in large-scale problems for 2-D exterior acoustics, Engineering Analysis with Boundary Elements, Vol.28, No.6, pp.685-709. (SCI and EI)
24. J. T. Chen, S. Y. Lin, K. H. Chen and I. L. Chen, 2004, Mathematical analysis and numerical study of true and spurious eigenequations for free vibration of plates using real-part BEM, Computational Mechanics, Vol.34, No.3, pp.165-180.
25. J. T. Chen, K. H. Chen, I. L. Chen and L. W. Liu, 2003, A new concept of modal participation factor for numerical instability in the dual BEM for exterior acoustics, Mechanics Research Communications, Vol.26, No.2, pp.161-174. (SCI and EI)
26. J. T. Chen, S. R. Lin, K. H. Chen, I. L. Chen and S. W. Chyuan, 2003, Eigenanalysis for membranes with stringers using conventional BEM in conjunction with SVD technique, Computer Methods in Applied Mechanics and Engineering, Vol.192, No.11-12, pp.1299-1322(SCI and EI)
27. J. T. Chen, I. L. Chen, K. H. Chen, Y. T. Lee, 2003, Comments on “Free vibration analysis of arbitrarily shaped plates with clamped edges using wave-type functions,” J. Sound and Vibration, Vol.262, No.2, pp.370-378. (SCI and EI)
28. J. T. Chen, W. C. Chen, S. R. Lin and I. L. Chen, 2003, Rigid body mode and spurious mode in the dual boundary element formulation for the Laplace equation, Computers and Structures, Vol.81, No.13, pp.1395-1404. (SCI and EI)
29. S. W. Chyuan, Y. S. Liao and J. T. Chen, 2003, An innovative and efficient method — DBEM for the electrostatic problems with singularity arising from degenerate boundary, IEEE Computing in Science and Engineering, Vol.5, No.3, pp.52-58. (SCI and EI)

30. J. T. Chen, L. W. Liu and H.-K. Hong, 2003, Spurious and true eigensolutions of Helmholtz BIEs and BEMs for a multiply-connected problem, Royal Society London Series A, Vol.459, No.2036, pp.1891-1925. (SCI and EI)
31. J. T. Chen, S. R. Kuo, I. L. Chung and C. X. Huang, 2003, Study on the true and spurious eigensolutions of two-dimensional cavities using the dual multiple reciprocity method, Engineering Analysis with Boundary Elements, Vol.27, No.7, pp.655-670. (SCI and EI)
32. J. T. Chen, W. C. Chen, K. H. Chen and I. L. Chen, 2003, Revisit of the free terms of the dual boundary integral; equations for elasticity, Kuwait Journal of Science and Technology, Vol.30, No.2, pp.1-22. (SCI and EI)
33. J. T. Chen, M. H. Chang, I. L. Chung and Y. C. Cheng, 2002, Comments on eigenmode analysis of arbitrarily shaped two-dimensional cavities by the method of point matching, J. Acoust. Soc. Amer., Vol.111, No.1, pp.33-36. (SCI and EI) ***(NSC-90-2011-E-019-021)***
34. J. T. Chen and Y. P. Chiu, 2002, On the pseudo-differential operators in the dual boundary integral equations using degenerate kernels and circulants, Engineering Analysis with Boundary Elements, Vol. 26, No.1, pp.41-53 (SCI and EI) ***(NSC-89-2011-E-019-021)***
35. J. T. Chen, K. H. Chen and C. T. Chen, 2002, Adaptive boundary element method of time-harmonic exterior acoustics problems in two-dimension, Computer Methods in Applied Mechanics and Engineering, Vol.191, pp.3331-3345. (SCI and EI)
    (NSC-89-2011-E-019-003; NSC-89-2011-E-019-022)
36. J. T. Chen and I. L. Chung, 2002, Computation of dynamic stiffness and flexibility for arbitrarily shaped two-dimensional membranes using an efficient mixed-part dual BEM, Structural Engineering and Mechanics, Vol.13, No.04, pp.437-453. (SCI and EI) ***(NSC-90-2011-E-019-021)***
37. J. T. Chen, S. R. Kuo and G. H. Lin, 2002, Analytical study and numerical experiments for degenerate scale problems in the boundary element method for two-dimensional elasticity, Int. J. Numer. Meth. Engng., Vol.54, No.12, pp.1669-1681. (SCI and EI) ***(NSC-89-2011-E-019-021)***
38. K. H. Chen, J. T. Chen, C. R. Chou and C. Y. Yueh, 2002, Dual boundary element analysis of oblique incident wave passing a thin submerged breakwater, Engineering Analysis with Boundary Elements, Vol.26, No.10, pp.917-928. (SCI and EI)
39. J. T. Chen, C. F. Lee, I. L. Chen and J. H. Lin, 2002, An alternative method for degenerate scale problems in boundary element methods for the two-dimensional Laplace equation, Engineering Analysis with Boundary Elements, Vol.26, No.7, pp.559-569. (SCI and EI)
    (NSC-89-2011-E-019-021)
40. J. T. Chen, M. H. Chang, K. H. Chen and S. R. Lin, 2002, The boundary collocation method with meshless concept for acoustic eigenanalysis of two-dimensional cavities using radial basis function, Journal of Sound and Vibration, Vol.257, No.4, pp.667-711. (SCI and EI) ***(NSC-90-2011-E-019-006)***
41. J. T. Chen, C. F. Lee and S. Y. Lin, 2002, A new point of view for the polar decomposition using singular value decomposition, Int. J. Comp. Numer. Anal. Appl., Vol.2, No.3, pp.257-264.
    (NSC-90-2011-E-019-006)
42. J. T. Chen, M. H. Chang, K. H. Chen and I. L. Chen, 2002, Boundary collocation method for acoustic eigenanalysis of three dimensional cavities using radial basis function, Computational

Mechanics, Vol.29, No.4-5, pp.392-408. (SCI and EI)

43. I. L. Chen, J. T. Chen and M. T. Liang, 2001, Analytical study and numerical experiments for radiation and scattering problems using the CHIEF method, Journal of Sound and Vibration, Vol.248, No.5, pp.809-828. (SCI and EI) ***(NSC-89-2011-E-019-021)***
44. J. T. Chen, S. R. Kuo and C. F. Lee, 2001, A new point of view for the Householder matrix by using matrix exponential, Int. J. Appl. Math., Vol.7, No.3, pp.289-308.
45. J. T. Chen, J. H. Lin, S. R. Kuo and S. W. Chyuan, 2001, Boundary element analysis for the Helmholtz eigenproblems with a multiply-connected domain, Proc. Royal Society of London Ser. A, Vol.457, No.2014, pp.2521-2546. (SCI and EI) ***(NSC-90-2011-E-019-021)***
46. J. T. Chen, J. H. Lin, S. R. Kuo and Y. P. Chiu, 2001, Analytical study and numerical experiments for degenerate scale problems in boundary element method using degenerate kernels and circulants, Engineering Analysis with Boundary Elements, Vol.25, No.9, pp.819-828. (SCI and EI) ***(NSC-89-2011-E-019-021)***
47. J. T. Chen, S. R. Kuo and Y. C. Cheng, 2001, On the true and spurious eigensolutions using circulant for real-part dual BEM, Proceedings of IUTAM/IACM/IABEM Symposium On Advanced Mathematical Computational Mechanics Aspects of Boundary Element Method, pp.75-85, Cracow, Poland, Kluwer Press. ***(NSC-90-2011-E-019-021)***
48. J. T. Chen and I. L. Chung, 2001, A unified method for constructing the dynamic stiffness and flexibility for rod, beam and circular membrane structures, Journal of Sound and Vibration, Vol.246, No.5, pp.877-899. (SCI and EI) ***(NSC-89-2011-E-019-021)***
49. J. T. Chen, I. L. Chung and I. L. Chen, 2001, Analytical study and numerical experiments for true and spurious eigensolutions of a circular cavity using an efficient mixed-part dual BEM, Computational Mechanics, Vol.27, No.1, pp.75-87. (SCI and EI) ***(NSC-90-2011-E-019-021)***
50. I. L. Chen, J. T. Chen, S. R. Kuo and M. T. Liang, 2001, A new method for true and spurious eigensolutions of arbitrary cavities using the CHEEF method, J. Acoust. Soc. Amer., Vol.109, No.3, pp.982-999. (SCI and EI) ***(NSC-90-2011-E-019-021)***
51. I. L. Chen, M. T. Liang, S. R. Kuo and J. T. Chen, 2001, Dual Boundary Integral Equations for Helmholtz equation at a Corner Using Contour Approach around Singularity, J. Marine Science and Technology, Vol.9, No.1, pp.53-63. (EI)
52. J. T. Chen, C. T. Chen, K. H. Chen and I. L. Chen, 2000, On fictitious frequencies using dual BEM for non-uniform radiation problems of a cylinder, Mechanics Research Communications, Vol.27, No.6, pp.685-690. (SCI and EI) ***(NSC-89-2011-E-019-021)***
53. J. T. Chen, S. R. Kuo, K. H. Chen and Y. C. Cheng, 2000, Comments on "Vibration analysis of arbitrary shaped membranes using nondimensional dynamic influence function", J. Sound and Vibration, Vol. 235, No. 1, pp. 156-171. (SCI and EI) ***(NSC-89-2011-E-019-003)***
54. J. T. Chen, S. R. Kuo, W. C. Chen and L. W. Liu, 2000, On the free terms of the dual BEM for the two and three-dimensional Laplace problems, J. Marine Science and Technology, Vol.8, No.1, pp. 8-15. (EI) ***(NSC-89-2011-E-019-021)***
55. S. W. Chyuan, J. H. Lin, J. T. Chen and D. C. Liu, 2000, Dual boundary element analysis for fatigue behavior of missile structure, J. Chinese Institute of Engineers, Vol.23, No.3, pp.339-348. (SCI and EI) ***(NSC-87-2011-E-019-017)***

56. S. R. Kuo, J. T. Chen, and C. X. Huang, 2000, Analytical study and numerical experiments for true and spurious eigensolutions of a circular cavity using the real-part dual BEM, Int. J. Numer. Meth. Engng., Vol.48, No.9, pp.1401-1422. (SCI and EI) ***(NSC-88-2011-E-019-005)***
57. J. T. Chen and S. R. Kuo, 2000, On fictitious frequencies using circulants for radiation problems of a cylinder, Mechanics Research Communications, Vol.27, No.1, pp. 49-58. (SCI and EI) ***(NSC-89-2011-E-019-021)***
58. J. T. Chen, C. X. Huang and F. C. Wong 2000, Determination of spurious eigenvalues and multiplicities of true eigenvalues in the dual multiple reciprocity method using the singular value decomposition technique, J. Sound and Vibration, Vol.230, No.2, pp. 203-219. (SCI and EI) ***(NSC-89-2011-E-019-003)***
59. J. T. Chen, 2000, Recent development of dual BEM in acoustic problems, Computer Methods in Applied Mechanics and Engineering, Vol.188, No.3-4, pp. 833-845. (SCI and EI) ***(NSC-88-2011-E-019-005)***
60. J. T. Chen and Y. W. Chen, 2000, Dual Boundary Element Analysis Using Complex Variables for Potential Problems with or without a Degenerate Boundary, Engineering Analysis with Boundary Elements, Vol.24, No.9, pp.671-684. (SCI and EI) ***(NSC-87-2011-E-019-017)***
61. 郭世榮、陳正宗與劉孟龍與全湘偉，2000，同心圓環二維 Helmholtz 方程特徵值問題真假根探討，中國土木與水利工程學刊，第十二卷，第三期，頁 553-540。***(NSC-88-8815-C-019-004-E)***
62. J. T. Chen, C. X. Huang and K. H. Chen, 1999, Determination of spurious eigenvalues and multiplicities of true eigenvalues using the real-part dual BEM, Computational Mechanics, Vol. 24, No.1, pp.41-51. (SCI and EI) ***(NSC-89-2011-E-019-003)***
63. J. T. Chen, M. T. Liang, I. L. Chen, S. W. Chyuan and K. H. Chen, 1999, Dual boundary element analysis of wave scattering from singularities, Wave Motion, Vol. 30, No.4, pp.367-381. SCI and EI）***(NSC-88-2011-E-019-005)***
64. J. T. Chen, K. H. Chen and S. W. Chyuan, 1999, Numerical Experiments for Acoustic Modes of A Square Cavity Using the Dual BEM, Applied Acoustics, Vol.57, No.4, pp.293-325. (SCI and EI) ***(NSC-86-2011-E-019-006)***
65. J. T. Chen and H.-K. Hong, 1999, Review of dual boundary element methods with emphasis on hypersingular integrals and divergent series, Applied Mechanics Reviews, ASME, Vol.52, No.1, pp.17-33. ***(NSC-86-2011-E-019-006; NSC-87-2011-E-019-017; NSC-88-2011-E-019-005)***
66. J. T. Chen and D. W. You, 1999, An integral-differential Equation Approach for the Free Vibration of a SDOF System with Hysteretic Damping, Advances in Engineering Software, Vol.30, No.1, pp.43-48. (SCI and EI) ***(NSC-85-2011-E-019-004)***
67. J. T. Chen, S. R. Kuo and K. H. Chen, 1999, A nonsingular integral formulation for the Helmholtz eigenproblems of a circular domain, J. Chinese Institute of Engineers, Vol.22, No.6, pp.729-739. (SCI and EI) ***(NSC-89-2011-E-019-003)***
68. J. R. Chang, W. Yeih and J. T. Chen, 1999, Determination of natural frequencies and natural modes using the dual BEM in conjunction with the domain partition technique, Computational Mechanics, Vol. 24, No.1, pp.29-40. (SCI and EI) ***(NSC-89-2011-E-019-003)***
69. S. R. Kuo and J. T. Chen, 1999, Forced vibration of a SDOF system with a new hysteretic damping subjected to harmonic loading, Int. J. Applied Mathematics, Vol.1, No.4, pp.411-438.

70. M. T. Liang, J. T. Chen and S. S. Yang, 1999, Error Estimation for Boundary Element Method, Engineering Analysis with Boundary Elements, Vol.23, No.3, pp.257-265. (SCI and EI) ***(NSC-85-2011-E-019-004)***
71. W. Yeih, J. R. Chang and J. T. Chen, 1999, A Boundary Formulation for Calculating Moments of an Arbitrary Closed Planar Region, Engineering Analysis with Boundary Elements, Vol.23, No.7, pp.611-617. (SCI and EI)
72. W. Yeih, J. T. Chen and C. M. Chang, 1999, Applications of dual MRM for determining the natural frequencies and natural modes of an Euler-Bernoulli beam using the singular value decomposition method, Engineering Analysis with Boundary Elements, Vol.23, No.4, pp.339-360.（SCI and EI） ***(NSC-88-2011-E-019-005)***
73. W. Yeih, J. R. Chang, C. M. Chang and J. T. Chen, 1999, Applications of dual MRM for determining the natural frequencies and natural modes of a rod using the singular value decomposition method, Advances in Engineering Software, Vol.30, No.7, pp.459-468.（SCI and EI）***(NSC-88-2011-E-019-005)***
74. 劉德源、陳正宗與陳桂鴻，1999，二維聲場聲模之邊界積分方程新解法，中國土木與水利工程學刊，第十一卷，第二期，頁 299-310。***(NSC-86-2011-E-019-006)***