

List of Publications

(1) Journal papers

1. C.-H. Lai, H.M. Liddell. A review of parallel finite methods on the DAP. *Appl Math Modelling*, **11**, 330 - 340, 1987.
2. C.-H. Lai, H.M. Liddell. Finite elements using long vectors of the DAP. *Parallel Computing*, **8**, 351 - 361, 1988.
3. C.-H. Lai. A parallel algorithm for transonic flow calculations. *Appl Math Modelling*, **14**, 495 - 500, 1990.
4. Y.D. Fryer, C. Bailey, M. Cross, C.-H. Lai. A control volume procedure for solving the elastic stress-strain equations on an unstructured mesh (with Y D Fryer, C Bailey and M Cross). *Appl Math Modelling*, **15**, 639 - 645, 1991.
5. C.-H. Lai. A non-overlapped domain decomposition for a class of convection diffusion problems. *Appl Math Modelling*, **16**, 101 - 106, 1992.
6. C.-H. Lai. Shooting methods for some diffusion and convection problems. *Appl Math Modelling*, **16**, 638 - 644, 1992.
7. C.-H. Lai, H.J.J. Te Riele. Solving some 1-D semiconductor device problems on a Matrix Coprocessor using a domain decomposition method. *Supercomputer*, **53**, 24 - 32, 1993.
8. C.-H. Lai. Domain decomposition methods for some semiconductor device problems on a Cray S-MP. *Int J Super Comp App*, **7.4**, 337-348, 1994.
9. C.-H. Lai. On Purcell's method and Gauss-Jordan method. *Int J of Math & Education*, **25**, 775 - 778, 1994.
10. C.-H. Lai. Diakoptics, domain decomposition and parallel computing. *The Computer Journal*, **37**, 840 - 846, 1994.
11. A.M. Cuffe, C.-H. Lai, K.A. Pericleous. An adaptive truncation technique for viscous/inviscid coupling, *ZAMM*, **76-1**, 385-387, 1996.
12. C.-H. Lai, A.M. Cuffe, K.A. Pericleous. A domain decomposition algorithms for viscous/inviscid coupling. *Advances in Engineering Software*, **26**, 151 - 159, 1996.
13. C.-H. Lai. A parallel algorithm for the simulation of temperature distribution in metal cutting. *Engineering Analysis and Boundary Elements*, **18**, 245 - 250, 1996.
14. C.-H. Lai. On an extension of Purcell's vector method with applications to panel element equations. *Computers and Mathematics with Applications*, **33**, 101 - 114, 1997.
15. C.-H. Lai. An application of quasi-Newton methods for the numerical solution of interface problems. *Advances in Engineering Software*, **28**, 333 - 339, 1997.
16. C.-H. Lai, A.M. Cuffe, K.A. Pericleous. A defect equation approach to the coupling of subdomains in domain decomposition methods. *Computers and Mathematics with Applications*, **35**, 81 - 94, 1998.
17. C. Ierotheous, C.H. Lai, C.J. Palansuriya, K.A. Pericleous. Simulation of 2D metal cutting by means of a distributed algorithm. *The Computer Journal*, **41**, 57 - 63, 1998.
18. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Development of numerical techniques for near-field aeroacoustic computations. *International Journal for Numerical Methods in Fluids*, **29**, 719 - 731, 1999.
19. C.-H. Lai, C.S. Ierotheou, C.J. Palansuriya, M.S. Espedal, X.-C. Tai. Accuracy of a domain decomposition method for the recovering of discontinuous heat sources in metal sheet cutting. *Computing and Visualisation in Science*, **2**, 149 - 152, 1999.
20. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Staggered-mesh computation for aerodynamic sound. *AIAA Journal*, **38**, 16 - 21, 2000.
21. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. On the coupling of Navier-Stokes and linearised Euler equations for aeroacoustics simulation. *Computing and Visualisation in Science*, **3**, 9 - 12, 2000.
22. C.W. Chueng, C.-H. Lai. On a flexible elimination algorithm with applications to panel element equations. *IMA Journal of Numerical Analysis*, **21**, 603-619, 2001.
23. C.-H. Lai, C.S. Ierotheou, C.J. Palansuriya, K.A. Pericleous. Performance evaluation of a distributed algorithm for an inverse heat conduction problem. *Computer Journal*, **44**, 214-220, 2001.
24. C.-H. Lai, C.S. Ierotheou, C.J. Palansuriya, K.A. Pericleous. A domain decomposition algorithm for inverse welding problems. *Computing and Visualisation in Science*, **4**, 105-109, 2001.
25. K. Chen, C.-H. Lai. Parallel algorithms of the Purcell method for direct solution of linear system. *Journal of Parallel Computing*, **28**, 1275-1291, 2002
26. J. Cao, C.-H. Lai. Numerical experiments of some Krylov subspace methods for black oil model. *Computers and Mathematics with Applications*, **44**, 125-141, 2002.
27. G.S. Djambazov, C.-H. Lai, K.A. Pericleous, Z.K. Wang. A coarse grid extraction of sound signals for computational aeroacoustics. *International Journal for Numerical Methods in Fluids*, **40**, 1515 - 1525, 2002.
28. Z.K. Wang, G.S. Djambazov, C.-H. Lai, K.A. Pericleous. An acoustic correction method for extracting sound signals. *Computers and Mathematics with Applications*, **47**, 57 - 69, 2004.
29. P. Chow, C.-H. Lai. Collaborating components in electronic packaging simulation. *Scientific Programming*, **12** (2), 65-70, 2004.
30. C.-H. Lai, A.K. Parrott, S. Rout, and M.E. Honour. A distributed algorithm for European options with nonlinear volatility. *Computers and Mathematics with Applications*, **49**, 885-894, 2005.
31. M. Wang and C.-H. Lai. A hybrid fractal video compression method. *Computers and Mathematics with Applications*, **50**, 611 - 621, 2005.
32. C.-H. Lai, G.S. Djambaziv, K.A. Pericleous, and Z.K. Wang. A distributed algorithm for flow induced acoustics. *Journal of Computational Acoustics*, **14** (1), 131 - 141, 2006.
33. M. Wang, Z. Huang, C.-H. Lai. Matching search in fractal video compression and its parallel implementation in distributed computing environments. *Applied Mathematical Modelling*, **30**, 677 - 687, 2006.
34. M. Wang, R. Liu, C.-H. Lai. Adaptive partition and hybrid methods in fractal video compression. *Computers and Mathematics with Applications*, **51**, 1715 - 1726, 2006.
35. Z.K. Wang, G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Numerical experiments of a source extraction technique based on an acoustic correction method. *Computers and Mathematics with Applications*, in print.
36. Z.-X. Cheng, T.-Z. Huang, C.-H. Lai and J.-S. Leng. Construction and properties of multi-wavelet packets with arbitrary scale and their related algorithms of decomposition and reconstruction. *Computers and Mathematics with Applications*, in print.

37. Q. Guo, D. Shen, Y. Guo, C.-H. Lai. Parallel genetic algorithms for the solution of inverse heat conduction problems. *Computers and Mathematics with Applications*, accepted.
38. H. Peng, M. Wang, C.-H. Lai. Design of parallel algorithms for fractal video compression. *Computers and Mathematics with Applications*, accepted.
39. L. Lü, M. Wang, C.-H. Lai. Image denoise using fourth-order partial differential equations combined with minimal surfaces. *Journal of Information and Computational Science*, accepted.
40. M. Wang, C.-H. Lai. Gray video compression methods using fractals. *International Journal of Computer Mathematics*, accepted.
41. Z.K. Wang, G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Numerical simulation of flow-induced cavity noise in self-sustained oscillations. *Computer and Visualisation in Science*, accepted.
42. A.J. Davies, D. Crann, S.J. Kane, C.-H. Lai. A hybrid Laplace transform/finite difference boundary element method for diffusion problems. *Computational Methods in Engineering Science*, accepted.

(2) Contributions to edited books

1. C.-H. Lai. An acceleration technique for a non-overlapped domain decomposition method, in **Computational and Applied Mathematics I - Theory and Algorithms**, ed C Brezinski and U Kulisch, Elsevier, North-Holland, 289 - 292, 1992.
2. C.-H. Lai. Domain decomposition for parallel computers, in **High Performance Computing in Engineering: vol 1**, ed C A Brebbia and H Power, Computational Mechanics Publication, 153 - 188, 1994.
3. G.S. Djambazov, C.-H. Lai, K.A. Pericleous, Z.K.Wang. A defect correction method for multi-scale problems in computational aeroacoustics, in **Lecture Notes in Computational Science and Engineering Vol 23**, ed L Pavarino *et al*, ISBN: 3-540-43413-5, Springer-Verlag, 147 - 156, 2002.
4. P. Chow, C.-H. Lai. Electronic packaging and reduction in modelling time using domain decomposition, in **Lecture Notes in Computational Science and Engineering Vol 40**, ed. R. Kornhuber *et al*, ISBN: 3-540-22523-4, Springer-Verlag, 193-200, 2004.

(3) Refereed contributions

1. C.-H. Lai, H.M. Liddell. Preconditioned conjugate gradient methods on the DAP, in **The Mathematics of Finite Elements & Applications VI**, ed J R Whiteman, Academic Press, 145 - 156, 1988.
2. C.-H. Lai. Applications of SIMD system. *Parallel Update*, 7, 1988.
3. C.-H. Lai. A parallel panel method for the solution of fluid flow past an aerofoil, in **CONPAR88**, ed C R Jesshope and K D Reinartz, Cambridge University Press, 711 - 781, 1989.
4. C.-H. Lai. Some experiences of computational aerodynamics on highly parallel processors, in **Applications of Supercomputers in Engineering II**, ed C A Brebbia and A Peters, Computational Mechanics Publications, 43 - 56, 1989.
5. C.-H. Lai. The DAP finite element library. *Parallel Update*, 8, 31 - 34, 1989.
6. C.-H. Lai. An acceleration technique for a non-overlapped domain decomposition method. **Proceedings of the 13th World Congress on Computation and Applied Mathematics**, vol 1, 219 - 220, Dublin, 22 - 26 July, 1991.
7. C.-H. Lai. A parallel domain decomposition algorithm for semiconductor simulation, in **Applications of Supercomputers in Engineering III**, ed C A Brebbia and H Power, 47 - 62, 1993.
8. C.-H. Lai. An iteration scheme for non-symmetric interface operator, in **Contemporary Mathematics**, American Mathematical Society, 157, 279 - 285, 1993.
9. C.-H. Lai. On domain decomposition and shooting methods for two-point boundary value problem, in **Contemporary Mathematics**, American Mathematical Society, 180, 257 - 264, 1994.
10. C.-H. Lai. Domain decomposition methods and massively parallel computing, in **Proceedings of the 6th Benin Conference on Scientific Computing**, ed S O Fatunla, Benin University Press, 1994.
11. C.-H. Lai. Massively parallel domain decomposition algorithms for some aerodynamic problems, in **EUROSIM Massively Parallel Processing**, ed J C Zuidervaat and L Dekker, Elsevier, North-Holland, 599 - 608, 1994.
12. C.-H. Lai. On diakoptics and domain decomposition. *Parallel Updates*, 18, 38 - 44, 1994.
13. C.-H. Lai. A domain decomposition algorithm for viscous/inviscid coupling, in **Applications of High Performance Computing in Engineering IV**, ed H Power, Computational Mechanics Publications, Southampton, 171 - 178, 1995.
14. C.-H. Lai, C.J. Palansuriya. A distributed algorithm for the simulation of temperatures in metal cutting, in **High Performance Computing & Networking, Lecture Notes in Computer Science**, vol 1067, Springer-Verlag, 968 - 969, 1996.
15. A.M. Cuffe, C.-H. Lai, K.A. Pericleous. A domain decomposition technique for viscous/inviscid coupling, in **Domain Decomposition Methods in Sciences and Engineering VIII**, ed. R. Glowinski *et al*, Wiley-Interscience, to appear in 1997.
16. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Testing a linear propagation module on some acoustic scattering problem, in **Proceedings of the Second International Workshop on Benchmark Problems for Computational Aeroacoustics**, Florida State University, Tallahassee, ed. R. Harding & C. Tam, 221 - 230, 1997.
17. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Domain decomposition methods for some aerodynamic noise problems. AIAA Paper 97-1608-CP, 1997.
18. C.-H. Lai, S. Law. A distributed algorithm for the simulation of temperature distribution in metal cutting, in **Proceedings of the International Conference on Manufacturing Automation**, University of Hong Kong, 1149 - 1154, 1997.
19. C.-H. Lai. A domain decomposition hierarchy for computational modelling, in **Applications of High Performance Computing in Engineering V**, Computational Mechanics Publications, ed H Power, JJ Casares Long, 13 - 22, 1997.
20. C.-H. Lai. A distributed algorithm for 1D nonlinear heat conduction with an unknown point source, in **Domain Decomposition in Sciences and Engineering**, vol 9, 768 - 775, Domain Decomposition Press, Bergen, 1998.
21. C.-H. Lai. Applications of quasi-Newton methods for the numerical coupling of some nonlinear problems, in **Domain Decomposition in Sciences and Engineering**, vol 9, 827 - 834, Domain Decomposition Press, Bergen, 1998.
22. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Development of a domain decomposition method for computational aeroacoustics, in **Domain Decomposition Methods in Sciences and Engineering**, vol 9, 719 - 725, Domain Decomposition Press, Bergen, 1998.

23. K. Chen, C.-H. Lai. Solutions of boundary element equations by a flexible elimination process, in **Contemporary Mathematics**, American Mathematical Society, 218, 311 - 317, 1998.
24. D. Crann, A.J. Davies, C.-H. Lai, S.H. Leong. Time domain decomposition for European options in financial modelling, in **Contemporary Mathematics**, American Mathematical Society, 218, 486 - 491, 1998.
25. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Efficient computation of aerodynamic noise, in **Contemporary Mathematics**, American Mathematical Society, 218, 500 - 506, 1998.
26. C.J. Palansuriya, C.-H. Lai, C.S. Ierotheou, K.A. Pericleous. A domain decomposition based algorithm for nonlinear 2D inverse heat conduction problems, in **Contemporary Mathematics**, American Mathematical Society, 218, 515 - 522, 1998.
27. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Staggered mesh computation for aerodynamic sound. AIAA Paper 98-2219, 1998.
28. C J Palansuriya, C.-H. Lai, C S Ierotheou, K A Pericleous, D E Keyes. Comparison of three algorithms for nonlinear metal cutting problems, in **Domain Decompositoin Methods in Sciences and Engineering**, vol 11, 318 - 321, published by ddm.org, Bergen, 1999.
29. C.-H. Lai, A.E.P. Veldman. Viscous-inviscid interaction: domain decomposition avant la lettre, in **Domain Decompositoin Methods in Sciences and Engineering**, vol 11, 354 - 362, published by ddm.org, Bergen, 1999.
30. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Sound generation by vortex-blade interactions, in **Domain Decompositoin Methods in Sciences and Engineering**, vol 11, 415 - 422, published by ddm.org, Bergen, 1999.
31. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. A solution expansion technique for the use of CFD in aeroacoustics computation. AIAA Paper 2000-2049.
32. G.S. Djambazov, C.-H. Lai, K.A. Pericleous. A defect correction method for the retrieval of acoustics waves, in **Domain Decomposition Methods in Sciences and Engineering**, vol 12, 289 - 296, published by ddm.org, Japan, 2001.
33. C.J. Palansuriya, C.-H. Lai, C.S. Ierotheou, K.A. Pericleous. Domain decomposition methods for welding problems, in **Domain Decomposition Methods in Sciences and Engineering**, vol 12, 411 - 420, published by ddm.org, Japan, 2001.
34. G.S. Djambazov, K.A. Pericleous, C.-H. Lai. Airframe sound simulation based on staggered-grid higher order schemes and finite volume CFD methods, in **Second SWING Aeroacoustics Workshop** (DLR, 6-7 October 2000, Braunschweig, Germany), Paper 11, Ed Korner & Delfs, DLR, 2001.
35. R.H. Marsden, C.-H. Lai, T.N. Croft. Domain decomposition using a 2level correction scheme, in **Lecture Notes in Computer Science**, vol 2330, 480-489, Springer, ISBN 3-540-43593-X, 2002.
36. Z.K. Wang, G.S. Djambazov, C.-H. Lai, K.A. Pericleous. Analysis of a defect correction method for computational aeroacoustics, in **Domain Decomposition Methods in Sciences and Engineering**, vol 13, 447 - 454, published by International Centre for Numerical Methods in Engineering, Barcelona, Spain, 2002.
37. A.J. Davies, M.E. Honnor, C.-H. Lai, A.K. Parrott, S. Rout. A distributed Laplace transform algorithm for European options, in **Computational Finance and its Applications**, 157 - 166, WIT Press, ISBN 1-85312-709-4, 2004.
38. C.-H. Lai, D. Crane, A.J. Davies. On a parallel time-domain method for the nonlinear Black-Scholes equation, in **Lecture Notes in Computational Science and Engineering**, vol 55, 661 - 668, Springer, ISBN 3-540-33468-3, 2006.

(4) Editorship

1. **Domain Decomposition Methods for Sciences and Engineering**, vol 11, ed C.-H. Lai, P. Bjorstad, M. Cross, O. Widlund, DDM.org Publication, ISBN 82-994951-1-3, Bergen, 1999.
2. *International Journal of Numerical Methods for Fluids - Special Issue for LMS Workshop on Domain Decomposition Methods for Fluid Mechanics*, Guest editor C.-H. Lai, **40** (12), 2002
3. *Journal for Sound and Vibration - Special Issue for IMA Conference on Computational Aeroacoustics*, Guest ed C.-H. Lai, P. Nelson, X. Zhang, **270** (3), 2004.
4. *Scientific Programming - Special Issue for DCABES2002 selected papers*, ed C.-H. Lai, **12** (2), 2004.
5. **Proceedings of the Joint DCABES and ICPACE Meeting on Distributed Algorithms for Science and Engineering**, ed A. Craig, C.-H. Lai, K. A. Pericleous, CMS Press, ISBN 1-904521-27-4, University of Greenwich, 2005.
6. *Applied Mathematical Modelling - Special Issue on Parallel and Vector Processing for Science and Engineering*, Guest editors: F. Magoules, C.-H. Lai, **30** (7), 2006.
7. *Applied Mathematical Modelling - Special Issue on Parallel and Distributed Computing for Computational Mechanics*, Guest editors: F. Magoules, C.-H. Lai, **30** (8), 2006.
8. *Computers and Mathematics with Applications - Special Issue on Distributed Algorithms for Science and Business*, Guest editors: A. J. Davies, C.-H. Lai, in print.
9. *International Journal of Computer Mathematics - Special Issue on Distributed algorithms in Science and Engineering*, Guest editors: C.-H. Lai, F. Magoules, in print.
10. *International Journal of Computer Mathematics - Special Issue on Innovative Algorithms for Fluid Mechanics*, Guest editors: F. Magoules, C.-H. Lai, in print.
11. *International Journal of Fluid Mechanics - Special Issue on Parallel and Distributed Algorithms for Fluid Mechanics*, Guest editors: C.-H. Lai, F. Magoules, in print.

(5) Reports & Other Conference Papers

1. Finite difference algorithms and data structures on the ICL DAP. *Annual Research Report*, Queen Mary College, University of London, 1982.
2. Panel methods for thick aerofoil problems on the ICL DAP. *Annual Research Report*, Queen Mary College, University of London, 1983.
3. Non-linear multigrid methods for TSP equation on the ICL DAP. *Annual Research Report*, Queen Mary College, University of London, 1984.
4. Applications of DAP to Computational Aerodynamics. *PhD Thesis*, Queen Mary College, University of London, 1985.
5. Black and white ordering on the DAP. *Computer Science Technical Report*, CS-TR 371, Queen Mary and Westfield College, University of London, 1986.

6. Preconditioned conjugate gradient methods on the DAP. *Abstract: The Sixth Conference on The Mathematics of Finite Elements and Applications*, Brunel University, 28 April - 1 May, 1987.
7. Finite elements using long vectors of the DAP. *Third International Conference on Vector and Parallel Processors in Computational Science*, Liverpool, 25 - 28 August, 1987.
8. Parallel transonic flow calculations. *Second International Conference on Vector and Parallel Computing*, Tromso, Norway, 6 - 10 June, 1988.
9. A parallel panel method for the solution of fluid flow past an aerofoil. *Conference on Parallelism in Research and Practice*, UMIST, 12 - 16 September, 1988.
10. Applications of highly parallel processors to computational aeronautical fluid dynamics. *Joint GAMNI/SMIA-IMA Conference on Computational Aeronautical Fluid Dynamics*, Antibes, France, 17 - 19 May, 1989. *Centre for Parallel Computing Report*, CPC-TR 5A.33, Queen Mary and Westfield College, 1989.
11. Some experiences of computational aerodynamics on highly parallel processors. *Abstract: International Conference on Applications of Supercomputers in Engineering*, Southampton, 5 - 7 September, 1989.
12. An iteration scheme for non-symmetric interface operator. *ERCIM Research Report*, ERCIM-92-R003, INRIA, 1992.
13. A note on the numerical solutions of non-linear electrostatic problems by domain decomposition. *RAL Mathematical Software Note*, MSGN/06/92, RAL, 1992.
14. A qualitative treatment of shooting methods and domain decomposition methods. *RAL Mathematical Software Note*, MSGN/14/92, RAL, 1992.
15. Numerical solutions of some semiconductor devices by a domain decomposition method (with C Greenough). *RAL Technical Report*, RAL-92-063, RAL, 1992.
16. An iteration scheme for non-symmetric interface operator. *Abstract: Sixth International Conference on Domain Decomposition Methods in Science and Engineering*, Como, Italy, 15 - 19 June, 1992.
17. Comparing quasi-Newton methods for solving sparse interface problems. *CWI Technical Report*, NM-R9303, CWI, 1993.
18. Some experiences of solving 1-D semiconductor devices on a Matrix Coprocessor by a domain decomposition method (with H J J te Riele). *CWI Technical Report*, NM-R9304, CWI, 1993.
19. Parallel experiments with simple linear algebra operation on a Cray SMP system (with A Ualit and H J J te Riele). *CWI Technical Note*, NM-N9301, CWI, 1993.
20. An overview of domain decomposition methods. *CNMPA Numerical Algorithms Report*, NMA001, University of Greenwich, 1993.
21. A parallel domain decomposition algorithm for semiconductor simulation. *Abstract: International Conference on Applications of Supercomputers to Engineering*, Bath, 27 - 29 September, 1993.
22. On domain decomposition and shooting methods for two-point boundary value problems. *Abstract: Seventh International Conference on Domain Decomposition Methods in Scientific and Engineering Computing*, 27 - 30 October, 1993.
23. A preliminary study of the relation between shooting and domain decomposition methods. *CNMPA Numerical Mathematics Report*, NMA002, University of Greenwich, 1993.
24. Domain decomposition methods and massively parallel computing. *Abstract: Sixth Benin Conference on Scientific Computing*, Benin City, Nigeria, 24 - 28 January, 1994.
25. Massively parallel domain decomposition algorithms for some aerodynamics problems. *Abstract: International Eurosim Conference*, Delft, The Netherlands, 21 - 23 June, 1994.
26. On domain decomposition and mapping issues for massively parallel processing, *CNMPA Report*, 95/IM/04, CMS Press, University of Greenwich, 1995.
27. An adaptive viscous/inviscid coupling technique. *Abstract: ICFD Conference on Numerical Methods for Fluid Dynamics*, Oxford, 3 - 6 April, 1995.
28. Quasi-Newton methods for the solution of some coupling problems. *Proceedings: EPSRC CFDC Meeting on Solution Strategies for CFD*, Didcot, 5 May, 1995.
29. A domain decomposition technique for viscous/inviscid coupling. *Abstract: Eighth International Conference on Domain Decomposition*, Beijing, China, 16 - 20 May, 1995.
30. An adaptive truncation technique for viscous/inviscid coupling (with A M Cuffe). *Abstract: The Third International Congress on Industrial and Applied Mathematics*, Hamburg, July 3 - 7, 1995.
31. Adaptive zonal recognition for viscous/inviscid coupling (with A M Cuffe & K A Pericleous). *Abstract: Ninth International Conference on Domain Decomposition*, Ullensvang, Norway, 1996.
32. Applications of quasi-Newton methods for the numerical coupling of some non-linear problems. *Abstract: Ninth International Conference on Domain Decomposition*, Ullensvang, Norway, 1996.
33. A distributed algorithm for inverse problems related to metal cutting (with C Palansuriya). *Abstract: Ninth International Conference on Domain Decomposition*, Ullensvang, Norway, 1996.
34. Development of a domain decomposition method for computational aeroacoustics. *Abstract: Ninth International Conference on Domain Decomposition*, Ullensvang, Norway, 1996.
35. Testing a linear propagation module on some acoustic scattering problems (with G Djambazov, K A Pericleous). *Abstract: The Second Computational Aeroacoustics Workshop on Benchmark Problems*, Florida State University, Tallahassee, Florida, Nov 4-5, 1996.
36. Parallelisation of numerical integral equations for the solution of unsteady subsonic compressible flow (with C W Cheung), *IMA Symposium on Parallel Computation*, University of Oxford, 13th July 1998.
37. An acoustic expansion method for the retrieval of noise signals in unsteady flow (with G Djambazov, K A Pericleous). *Abstract: ICIAM99*, Edinburgh, 5th-9th July, 1999.
38. An asynchronous algorithm for the solution of unsteady subsonic compressible flow (with C W Cheung, City University). *Abstract: ICIAM99*, Edinburgh, 5th-9th July, 1999.
39. Unsteady response of an isolated finite span swept airfoil to an incident gust (with G S Djambazov, K A Pericleous). *Third Computational Aeroacoustics (CAA) Workshop on Benchmark Problems*, 8th-10th November, 1999.
40. A source retrieval approach for computational aeroacoustics (with Z K Wang, G S Djambazov, K A Pericleous), in *Proceedings of the 9th Annual Conference of the Association for Computational Mechanics in Engineering*, ed. A H Chan, 147 - 150, 2001.
41. A distributed algorithm for the estimation of heat generation in a welding process (with C.S. Ierotheou, C.J. Palansuriya, K.A. Pericleous), in *Proceedings of DCABES2001*, ed Q. Guo, Hubei Science and Technology Press, China, 94 - 96, 2001.

42. On fully staggered-mesh higher order schemes and finite volume CFD methods for aerodynamic sound simulation, in Proceedings of the 8th International Congress on Sound and Vibration, ed. L. Cheng, K.M. Li and R.M.C. So, 463 - 470, 2001.
43. Aeroacoustic computation of an open cavity flow using a coupled LES/LEE approach (with Wang, Z.K., Tilford, T., Djambazov, G.S., Pericleous, K.A.), in International Conference of Noise & Vibration Engineering-ISMA'2002, 16 to 18 Sept., Belgium, paper number 247, 2002.
44. Calculation of acoustic wave propagation (with Z K Wang, G S Djambazov, K A Pericleous), in Proceedings of the 10th Annual Conference of the Association for Computational Mechanics in Engineering, 107 – 110, 2002.
45. Collaborating components in mesh-based electronic packaging (with P. Chow), in Proceedings of DCABES2002, ed. Q. Guo and W. Xu, Wuhan University of Technology Press, China, 333 – 336, 2002.
46. Computational modelling of reactive transport in hydrogeological systems (with N K Kiani, M K Patel), in Proceedings of 3rd International Conference on Water Resources Management, Algarve, Portugal, 11 – 13 April 2005.
47. The effect of a sun-roof on the sound distribution of the interior of a car compartment (with L S Lai, G S Djambazov, K A Pericleous), in Proceedings of the 12th International Congress on Sound and Vibration, Lisbon, Portugal, 11 – 14 July 2005.

(6) Other Publications

1. C.-H. Lai, D. Parkinson. Matrix Multiplication and Recurrence Relations, **Notes in Parallel Computing: Part 1**, Centre for Parallel Computing, Queen Mary, University of London, 1987.
2. C.-H. Lai. Iterative Techniques and Neighbouring Operations. **Notes in Parallel Computing: Part 2**, Centre for Parallel Computing, Queen Mary, University of London, 1988.
3. C.-H. Lai. DAPFELIB Level 0 Documentation: Tools and Utilities. Centre for Parallel Computing, Queen Mary and Westfield College, 1988.
4. C.-H. Lai. DAP finite element demonstration programs. *Centre for Parallel Computing Technical Report*, CPC-TR2.39, Queen Mary and Westfield College, 1988.
5. C.-H. Lai, H.M. Liddell. C. Muhas. DAPFELIB Level 1 Documentation: Scientific and Engineering Applications. Centre for Parallel Computing, Queen Mary and Westfield College, 1989.
6. C.-H. Lai. Parallel numerical algorithms. *CONTROL-S*, School of Math Stat & Comp, University of Greenwich, **4**, no 1, 22 - 23, 1990.
7. C.-H. Lai. Some basic research of parallel algorithms at Thames Polytechnic. *IMA CFD News*, **1**, no 3, 4 - 6, 1990.
8. C.-H. Lai. Nigerian Scientific Computing Conference. *Parallel Update*, 18, 4 - 5, 1994.
9. C.-H. Lai. Some algorithm development for computational aerodynamics at Greenwich. *Engineering Computing Newsletter*, EPSRC, 58, September 1995.
10. C.-H. Lai. Parallel processing research group at the University of Greenwich. *Parallel Update*, **19**, 33 - 34, 1996.
11. C.-H. Lai. Book Review: The F Programming Language (by M Metcalf and J Reid). *Mathematics Today*, **33**, No 4, 1997.
12. C.-H. Lai. Book Review: Analysis of Algorithms: Computational Methods and Mathematical Tools (by M Hofri). *Mathematics Today*, **34**, No 2, 1998.
13. C.-H. Lai. Book Review: Numerical Recipes in Fortran: The Art of Parallel Computing (by W H Press, S A Teukolsky, W T Vetterling and B P Flannery). *Mathematics Today*, **34**, No 2, 1998.
14. C.-H. Lai. Report on the 11th International Conference on Domain Decomposition Methods. *European Mathematical Society Newsletter*, Issue 29, 27 - 28, September 1998.
15. C.-H. Lai. Book Review: Initial Approximations and Root Finding Methods (by N V Kyurchiev), *Mathematics Today*, **36**, No 5, 2000.
16. C.-H. Lai. A Report on IMA Conference on Computational Aeroacoustics, *Mathematics Today*, **38**, No 4, 2002.
17. C.-H. Lai. Book Review: Calculus 2nd Edition (by R.T.Smith and R.B. Minton), *MSOR Connections*, **3**, No. 1, 2003.
18. C.-H. Lai. Book Review: Java Gently for Engineers and Scientists (by J.M. Bishop and N.T. Bishop), <http://www.ics.ltsn.ac.uk/books/compbook.html>, July 2004.
19. C.-H. Lai. Book Review: Mathematical and Computational Methods for Compressible Flow (by M. Feistauer, J. Fleckman, I. Straskbraba), *Journal of Sound and Vibration*, **287**, 2005.

(7) In queue

1. Q.P. Guo, C.-H. Lai, R.H. Marsden, and T.N. Croft. Collaborating subdomains using a 2-level correction scheme. *Journal of Computer Mathematics*, submitted.
2. C.-H. Lai. Coupling of subproblems of geometric disparity. *Computers and Mathematics with Applications*, submitted.
3. N. J. Kiani, M. K. Patel, C.-H. Lai. CFD analysis of one-dimensional infiltration in vadose zone. *Hydrological Processes*, submitted.
4. N. J. Kiani, M. K. Patel, C.-H. Lai. Investigating uncertainties in heterogeneity using CFD for flow. *Water, Air, and Soil Pollution*, submitted.
5. D. Crann, A.J. Davies, S.J. Kane, C.-H. Lai. Time dependent nonlinear parabolic problems and option pricing using Laplace transform, *The Computer Journal*, submitted.