

Chiara GUARDASONI

Publications

Thesis

- T1. C.Guardasoni: *Wave Propagation Analysis with Boundary Element Method*, PhD Thesis, ed. Ledizioni, Milan, (2010), open access copy available at <http://air.unimi.it/handle/2434/148419>.

Refereed Papers on Journals or Books

- P1. C.Guardasoni, S.Sanfelici: *A Boundary Element approach to barrier option pricing in Black-Scholes framework*, submitted to International Journal of Computer Mathematics.
- P2. A.Aimi, L.Desiderio, M.Diligenti, C.Guardasoni: *A numerical study of energetic BEM-FEM applied to wave propagation in 2D multidomains*, Publications de l'Institut Mathématique, 96 (110), pp.5-22, (2014).
- P3. A.Aimi, M.Diligenti, A.Frangi, C.Guardasoni: *Energetic BEM-FEM coupling for wave propagation in 3D multidomains*, Internat. J. Numer. Methods Engrg., 97, pp.377-394, DOI: 10.1002/nme.4602, (2014).
- P4. A.Aimi, M.Diligenti, C.Guardasoni, S. Panizzi: *Energetic BEM-FEM coupling for wave propagation in layered media*, Communications in Applied and Industrial Mathematics, DOI: 10.1685/journal.caim.438, (2013).
- P5. A.Aimi, M.Diligenti, A.Frangi, C.Guardasoni: *Neumann exterior wave propagation problems: computational aspects of 3D energetic Galerkin BEM*, Comput. Mech., 51, pp. 475-493, (2013).
- P6. A.Aimi, M.Diligenti, A.Frangi, C.Guardasoni: *A stable 3D energetic Galerkin BEM approach for wave propagation interior problems*, Engineering Analysis with Boundary Elements, 36, pp. 1756-1765, (2012).
- P7. A.Aimi, M.Diligenti, C.Guardasoni: *Restriction matrices in space-time energetic BEM*, Engineering Analysis with Boundary Elements, 36, pp. 1256-1271, (2012).
- P8. A.Aimi, S.Gazzola, C.Guardasoni: *Energetic boundary element method analysis of wave propagation in 2D multilayered media*, Math. Methods Appl. Sci., 35, pp. 1140-1160, DOI: 10.1002/mma.1612, (2012).
- P9. A.Aimi, S.Gazzola, C.Guardasoni: *Energetic BEM for domain decomposition in 2D wave propagation problems*, Communications in Applied and Industrial Mathematics, 2 (1), pp.1-22, DOI: 10.1685/journal.caim.365, (2011).
- P10. A.Aimi, M.Diligenti, C.Guardasoni: *Numerical integration schemes for applications of energetic Galerkin BEM to wave propagation problems*, Riv. Mat. Univ. Parma, 2, pp. 147-187, (2011).
- P11. A.Aimi, M.Diligenti, C.Guardasoni: *On the energetic Galerkin boundary element method applied to wave propagation problems*, J. of Comput. and Appl. Math., 235, pp. 1746-1754, (2011).
- P12. A.Aimi, M.Diligenti, C.Guardasoni: *Numerical integration schemes for space-time hypersingular integrals in energetic Galerkin BEM*, Num. Alg., 55, pp. 145-170, (2010).

- P13. A.Aimi, M.Diligenti, C.Guardasoni, I.Mazzieri, S.Panizzi: *A space-time Galerkin BEM for 2D exterior wave propagation problems*, in Applied and Industrial Mathematics in Italy III, Proceedings of the 9th Conference SIMAI, E. De Bernardis, R. Spigler, V. Valente (Eds.), World Scientific, Singapore, 82, pp. 13-24, (2010).
- P14. A.Aimi, M.Diligenti, C.Guardasoni, I.Mazzieri, S.Panizzi: *An energy approach to space-time Galerkin BEM for wave propagation problems*, Internat. J. Numer. Methods Engrg., 80, pp. 1196-1240, (2009).
- P15. A.Aimi, M.Diligenti, C.Guardasoni, S.Panizzi: *A space-time energetic formulation for wave propagation analysis by BEMs*, Riv. Mat. Univ. Parma, (7) 8, pp. 171-207, (2008).
- P16. A.Aimi, M.Diligenti, M.Groppi, C.Guardasoni: *On the numerical solution of a BGK-type model for chemical reactions*, European J. Mech. B/Fluids, 26, pp. 455-472, (2007).
- P17. A.Aimi, M.Diligenti, M.Groppi, C.Guardasoni: *Numerical approximation of a BGK-type relaxation model for reactive mixtures*, in Applied and Industrial Mathematics in Italy II, Series on Advances in Mathematics for Applied Sciences, V. Cutello, G. Fotia, L. Puccio (Eds.), World Scientific, Singapore, 75, pp. 1-12, (2007).

Conference Proceedings

- CP1. A.Aimi, M.Diligenti, C.Guardasoni, S.Panizzi: *Energetic BEM-FEM coupling for the numerical solution of the damped wave equation*, in AIP Conference Proceedings of ICNAAM 2014, Eds. ??, pp. 1-4 (2014).
- CP2. A.Aimi, M.Diligenti, C.Guardasoni, S.Panizzi: *Numerical analysis of 1D damped wave equation by "energetic" weak formulation*, in ECCM V Conference Proceedings, Eds. E. Oñate, X. Oliver, A. Huerta, pp. 1-11 (2014).
- CP3. A.Aimi, L.Desiderio, M.Diligenti, C.Guardasoni: *Analysis of Damped Waves Using Energetic BEM-FEM Coupling*, in Advances in Boundary Element Techniques (BETEQ), XV, Eds. V. Mallardo and M.H. Aliabadi, pp. 28-33 (2014).
- CP4. C.Guardasoni, S.Sanfelici: *Fast Numerical Pricing of Barriers Options under Stochastic Volatility & Jumps*, in Abstracts of ISDESAMF 2014, p. 24 (2014).
- CP5. C.Guardasoni, S.Sanfelici: *Fast Numerical Pricing of Barriers Options under Stochastic Volatility and Jumps*, in Extended Abstracts of XV Workshop on Quantitative Finance, University of Firenze, p. 1-11 (2014).
- CP6. C.Guardasoni, S.Sanfelici: *A boundary element PDE approach to corporate debt*, in Abstracts CFE-ERCIM 2013, University of London, p. 97 (2013).
- CP7. A.Aimi, L.Desiderio, M.Diligenti, C.Guardasoni: *Energetic BEM-FEM for 2D wave propagation problems*, in Abstracts IWATA 2013, XIV, University of Basilicata, p. 27 (2013).
- CP8. A.Aimi, L.Desiderio, M.Diligenti, A.Frangi, C.Guardasoni: *Energetic BEM-FEM coupling for wave propagation in layered media*, in Advances in Boundary Element Techniques (BETEQ), XIV, Eds. A. Sellier and M.H. Aliabadi, pp. 1-6 (2013).
- CP9. A.Aimi, M.Diligenti, C.Guardasoni: *Platonic Solids, Restrictions Matrices and Space-Time Energetic Galerkin BEM*, Proceedings of the 11th International Conference on Mathematical and Numerical Aspects of Waves, pp. 199-200, (2013).

- CP10. A.Aimi, C.Guardasoni, S.Panizzi: *BEM-FEM coupling for the one-dimensional Klein-Gordon equation*, Proceedings of the 11th International Conference on Mathematical and Numerical Aspects of Waves, pp. 193-194, (2013).
- CP11. A.Aimi, M.Diligenti, A.Frangi, C.Guardasoni: *Energetic BEM-FEM coupling for wave propagation in unbounded domains*, Proceedings of the 11th International Conference on Mathematical and Numerical Aspects of Waves, pp. 185-186, (2013).
- CP12. A.Aimi, M.Diligenti, A.Frangi, C.Guardasoni, M.Manzini: *Restriction Matrices for Exploiting Symmetry in 3D Wave Propagation Analysis by Energetic BEM*, Book of abstracts of ECCOMAS Congress and CD-ROM Proceedings, pp. 1-20, (2012).
- CP13. A.Aimi, M.Diligenti, A.Frangi, C.Guardasoni: *An energetic approach to BEM-FEM coupling for wave propagation phenomena*, Book of abstracts of 11th SIMAI Congress, p. 124, (2012).
- CP14. A.Aimi, M.Diligenti, A.Frangi, C.Guardasoni: *A stable energetic Galerkin BEM for 3D wave propagation interior problems*, Book of abstracts of SIMAI Congress, p. 126, (2012).
- CP15. A.Aimi, M.Diligenti, C.Guardasoni, S. Panizzi: *On the regularization of Galerkin BEM hypersingular bilinear forms*, Book of abstracts of the International Conference on Scientific Computing (SC2011), p. 226, (2011).
- CP16. A.Aimi, A.Frangi, C.Guardasoni, S. Panizzi: *Un metodo BEM energetico di tipo Galerkin per problemi di propagazione di onde*, Conferenze e Comunicazioni XIX congresso UMI (Unione Matematica Italiana), p. 265, (2011).
- CP17. A.Aimi, M.Diligenti, A.Frangi, C.Guardasoni: *On the energetic Galerkin BEM applied to 3D wave propagation problems*, Extended Abstracts of IABEM Symposium, pp. 7-12, (2011).
- CP18. A.Aimi, M.Diligenti, C.Guardasoni: *Energetic Galerkin BEM for 2D Wave Propagation Problems in Piecewise Homogeneous Media*, AIP Conference Proceedings, pp. 2085-2088, (2010).
- CP19. A.Aimi, M.Diligenti, C.Guardasoni, S. Gazzola: *Multi-domain BEM for two dimensional problems of wave propagation*, Book of abstracts of X SIMAI congress, p. 71, (2010).
- CP20. A.Aimi, M.Diligenti, C.Guardasoni: *Exploiting geometrical symmetries*, ECCM 2010 - Abstracts. Parigi, (2010).
- CP21. A.Aimi, M.Diligenti, C.Guardasoni: *Efficient numerical integration schemes for the discretization of hypersingular BIEs related to wave propagation problems*, Book of abstracts of the 2nd Dolomites Workshop on Constructive Approximation and Application (DWCAA 2009), p. 64, (2009).
- CP22. A.Aimi, M.Diligenti, C.Guardasoni: *Numerical integration schemes for the discretization of BIEs related to wave propagation problems*, Proceedings of the International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2009), pp. 45-56, (2009).
- CP23. A.Aimi, M.Diligenti, C.Guardasoni, I.Mazzieri, S.Panizzi: *An energy approach for time-domain boundary integral formulations of the wave equation*, Book of Abstracts IX SIMAI Congress, p. 1, (2008).
- CP24. A.Aimi, M.Diligenti, C.Guardasoni: *Numerical results for the wave propagation problem with space-time boundary element method*, Proceedings of XVIII AIMETA Congress, CD-rom, 12 pp., (2007) or Atti del XVIII congresso dell'Associazione Italiana di Meccanica Teorica e Applicata, Eds. A. Carini, G. Mimmi and R. Piva, pp. 393-404, (2007).

- CP25. A.Aimi, A.Carini, M.Diligenti, C.Guardasoni: *Numerical results of one-dimensional wave propagation analysis in layered media*, in Advances in Boundary Element Techniques (BETEQ), VIII, Eds. V. Minutolo and M.H. Aliabadi, pp. 1-6 (2007).
- CP26. A.Aimi, C.Guardasoni, S.Panizzi: *One-dimensional wave propagation analysis in layered media by BEMs*, Book of Abstract of the SIMAI Meeting su Prospettive di “Sviluppo della Matematica Applicata in Italia”, p. 1, (2007).
- CP27. A.Aimi, M.Diligenti, M.Groppi, C.Guardasoni: *Numerical approximation of a BGK-type relaxation model for reactive mixtures*, Extended Abstracts VIII Congresso SIMAI, CD Rom, 4 pp., (2006).

Technical Reports and other publications

- TR1. C.Guardasoni: *Analisi della propagazione di onde con il metodo degli elementi al contorno*, La matematica nella Società e nella Cultura: rivista della Unione Matematica Italiana. Serie I, 4 (1), pp. 55-58, (2011).
- TR2. A.Aimi, M.Diligenti, C.Guardasoni: *Numerical integration schemes for the Galerkin BEM related to wave propagation problems*, Quaderni Dip. Mat. Univ. Parma, n. 495, (2009).
- TR3. A.Aimi, M.Diligenti, C.Guardasoni, I.Mazzieri, S.Panizzi: *An energy approach to space-time Galerkin BEM for wave propagation problems*, Quaderni Dip. Mat. Univ. Parma, n. 487, (2008).
- TR4. C. Guardasoni, *Il BEM per il problema di Dirichlet su un dominio esterno ad un arco relativo all'equazione di Helmholtz*, Quaderni Dip. Mat. Univ. Parma, n. 449, (2006).

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