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CV - ANNEX 01

Publications list

INTERNATIONAL PUBLICATIONS

JOURNALS

- 1) **Majorana CE, Zavarise G, Borsetto M, Giuseppetti M.** Nonlinear analysis of thermal stresses in mass concrete castings, *Cem. Concr. Res.*, Vol. 20-(4), 559-578, 1990.
- 2) **Zavarise G, Vitalicani R, Schrefler BA.** An algorithm for the generation of shape functions in Serendipity elements, *Eng. Computations*, Vol. 8, 19-31, 1991.
- 3) **Zavarise G, Wriggers P, Stein E, Schrefler BA.** A numerical model for thermomechanical contact based on microscopic interface laws, *Mech. Res. Commun.*, Vol. 19-(3), 173-182, 1992.
- 4) **Zavarise G, Wriggers P, Stein E, Schrefler BA.** Real contact mechanisms and finite-element formulation - a coupled thermomechanical approach, *Int. J. Numer. Methods Eng.*, Vol. 35-(4), 767-785, 1992.
- 5) **Schrefler BA, Zavarise G.** Constitutive laws for normal stiffness and thermal resistance of a contact element, *Microcomp. Civil Eng.*, Vol. 8, 299-308, 1993.
- 6) **Majorana C, Zavarise G.** Environmental effects modelling in thermal analysis of large concrete castings, *Int. J. of Comput. Appl. Technol.*, Vol. 6-(4), 187-201, 1993.
- 7) **Zavarise G, Wriggers P.** Thermomechanical contact - a rigorous but simple numerical approach, *Comput. Struct.*, Vol. 46-(1), 47-53, 1993.
- 8) **Schrefler BA, Zavarise G, Gori R.** A fast error check for structural analysis using the virtual force principle, *Int. J. Numer. Methods Eng.*, Vol. 36-(19), 3223-3237, 1993.
- 9) **Wriggers P, Zavarise G.** Application of augmented lagrangian techniques for nonlinear constitutive laws in contact interfaces, *Commun. Numer. Methods Eng.*, Vol. 9-(10), 815-824, 1993.
- 10) **Zavarise G, Wriggers P, Schrefler BA.** On augmented lagrangian algorithms for thermomechanical contact problems with friction, *Int. J. Numer. Methods Eng.*, Vol. 38-(17), 2929-2949, 1995.
- 11) **Zavarise G, Wriggers P.** On the efficiency of new and old strategies for solving contact problems, *ZAMM - J. Appl. Math. Mech - Zeitschrift für Angewandte Mathematik und Mechanik*, Vol. 76-S5, 563-564, 1996.
- 12) **Schrefler BA, Zavarise G.** On cross-constraints method and physical contact laws, *Matem. Mod.*, Vol. 8-(9), 85-94, 1996.
- 13) **Wriggers P, Zavarise G.** On contact between three-dimensional beams undergoing large deflections, *Commun. Numer. Methods Eng.*, Vol. 13-(6) 429-438, 1997.
- 14) **Galtarossa A, Someda CG, Tommasini A, Schrefler BA, Zavarise G, Schiano M.** Stress distribution in optical-fiber ribbons, *IEEE Photonics Technol. Lett.*, Vol. 9-(3-4), 354, 356, 1997.
- 15) **Zavarise G, Wriggers P.** A segment-to-segment contact strategy, *Math. Comput. Model.*, Vol. 28, (4-8), 497-515, 1998.
- 16) **Zavarise G, Wriggers P, Schrefler BA.** A method for solving contact problems, *Int. J. Numer. Methods Eng.*, Vol. 42-(3), 473-498, 1998.
- 17) **Wriggers P, Zavarise G, Zohdi TI.** A computational study of interfacial debonding damage in fibrous composite materials, *Comput. Mater. Sci.*, Vol. 12-(1), 39-56, 1998.

- 18) **Zavarise G, Wriggers P.** A superlinear convergent augmented Lagrangian procedure for contact problems, Eng. Computation., Vol. 16-(1), 88-119, 1999.
- 19) **Zavarise G, Wriggers P.** Contact with friction between beams in 3-D Space, Int. J. Numer. Methods Eng., Vol. 49-(8), 977-1006, 2000.
- 20) **Cantizano A, Carnicero A, Zavarise G.** Numerical simulation of wear-mechanisms maps, Comput. Mater. Sci., Vol. 25-(1-2), 54-60, 2002.
- 21) **Bellina F, Boso D, Schrefler BA, Zavarise G.** Modelling a multistrand SC cable with an electrical DC lumped network. IEEE Trans. Appl. Supercond., Vol. 12-(1), 1408-1412, 2002.
- 22) **Nardin A, Zavarise G, Schrefler BA.** Modelling of cutting tools-soil interactions – Part I: Contact behaviour, Comput. Mech., Vol. 31-(3-4), 327-339, 2003.
- 23) **Boso DP, Zavarise G, Schrefler BA.** A microscopical model for electric-mechanical contact, PAMM - Proc. Appl. Math. Mech. Vol. 3, 258-259, 2003. DOI 10.1002/pamm.200310401.
- 24) **Nardin A, Schrefler BA, Zavarise G.** Discrete method for soil modelling, PAMM - Proc. Appl. Math. Mech. Vol. 3, 308–309, 2003. DOI 10.1002/pamm.200310426.
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- 26) **Zavarise G, Bacchetta A, Gänser HP** Frictional heating in contact mechanics – a methodology to deal with high temperature gradients, Comput. Mech., Vol. 35-(6), 418-429, 2005. DOI: 10.1007/s00466-004-0631-8.
- 27) **Boso DP, Zavarise G, Schrefler BA.** A formulation for electrostatic-mechanical contact and its numerical solution. Int. J. Numer. Methods Eng., Vol. 64-(3), 382-400, 2005. DOI: 10.1002/nme.1371.
- 28) **Carpinteri A, Paggi M, Zavarise G.** Snap-back instability in micro-structured composites and its connection with superplasticity, Strength, Frac. Complexity, Vol. 3-(2-4), 61-72, 2005. ISSN: 1567-2069.
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- 32) **De Lorenzis L, Zavarise G.** Modeling of mixed-mode debonding in the peel test applied to superficial reinforcements. Int. J. Solids Struct., Vol. 45-(20), 5419-5436, 2008. DOI: 10.1016/j.ijsolstr.2008.05.024.
- 33) **De Lorenzis L, Zavarise G.** Interfacial stress analysis and prediction of debonding for a thin plate bonded to a curved substrate, Int. J. Non-Linear Mech., Vol. 44, 358-370, 2009. DOI: 10.1016/j.ijnonlinmec.2009.01.002.
- 34) **Cavaliere P, Zavarise G, Perillo M.** Modeling of the carburizing and nitriding processes. Comput. Mater. Sci. Vol. 46, 26-35, 2009. DOI: 10.1016/j.commatsci.2009.01.024.

- 35) **Zavarise G, De Lorenzis L.** A modified node-to-segment algorithm passing the contact patch test. *Int. J. Numer. Methods Eng.*, Vol. 79, 379-416, 2009. DOI: 10.1002/nme.2559.
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- 37) **De Lorenzis L, Zavarise G.** Cohesive zone modeling of interfacial stresses in plated beams, *Int. J. Solids Struct.*, Vol. 46, 4181-4191, 2009. DOI: 10.1016/j.ijsolstr.2009.08.010.
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- 41) **Paggi M, Zavarise G.** Contact mechanics of microscopically rough surfaces with graded elasticity, *European Journal of Mechanics - A/Solids*, Vol. 30 (5), 696-704, 2011. DOI: 10.1016/j.euromechsol.2011.04.007
- 42) **De Lorenzis L, Temizer I, Wriggers P, Zavarise G.** A large deformation frictional contact formulation using NURBS-based isogeometric analysis. *Int. J. Numer. Methods Eng.*, Vol. 87, 1278-1300, 2011. DOI: 10.1002/nme.3159
- 43) **Dimitri R, De Lorenzis L, Zavarise G.** Numerical study on the dynamic behavior of masonry columns and arches on buttresses with the discrete element method, *Eng Struct*, Vol. 33, 3172-3188, 2011. DOI: 10.1016/j.engstruct.2011.08.018
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- 46) **Zavarise G, De Lorenzis L.** An augmented Lagrangian algorithm for contact mechanics based on linear regression, . *Int. J. Numer. Methods Eng.*, Vol. 91, 825-842, 2012. DOI: 10.1002/nme.4294.
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- 48) **Dimitri R, De Lorenzis L, Scott MA, Wriggers P, Taylor R, Zavarise G.** Isogeometric large deformation frictionless contact using T-splines, *Comput. Methods Appl. Mech. Engrg.*, Vol. 269, 394-414, 2014.
- 49) **Dimitri R, De Lorenzis L., Wriggers P., Zavarise G.** NURBS- and T-spline-based isogeometric cohesive zone modeling of interface debonding, *Comput. Mech.*, Vol. 54, 369-388, 2014.

- 50) **Dimitri R, Trullo M, De Lorenzis L, Zavarise G.** A consistency assessment of coupled cohesive zone models for mixed-mode debonding problems,. Fracture and Structural Integrity. Vol. 29, 266-283, 2014.
- 51) **De Lorenzis L, Grancagnolo F, L'Erario A, Maffezzoli A, Miccoli, Rella S, Spedicato M, Zavarise, G.** Analysis and Characterization of the Mechanical Structure for the I-Tracker of the Mu2e Experiment, Nuclear Physics B - Proceedings Supplements, Vol. 248–250, 134-136, 2014. Doi: 10.1016/j.nuclphysbps.2014.02.027.
- 52) **Zavarise G.** The shifted penalty method, Comput. Mech., Vol. 56, 1-17, 2015. Doi: 10.1007/s00466-015-1150-5.
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- 54) **Sciumè G, Schrefler BA, Santagiuliana R, Zavarise G.** Mechanics of growing tumors: impact of modeling assumptions and boundary conditions on reliability of numerical results. Proc. Appl. Math. Mech, Vol. 15, 109-110, 2015. Doi: 10.1002/pamm.201510045.
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- 56) **Dimitri R, Fantuzzi N, Tornabene F, Zavarise G.** Innovative numerical methods based on sfem and iga for computing stress concentrations in plates with discontinuities. Int. J. of Mechanical Sciences, Vol. 118, 166-187, 2016. Doi: 10.1016/j.ijmecsci.2016.09.020.

Accepted

Submitted

- 1) **Dimitri R, Zavarise G.** Isogeometric treatment of frictional contact and mixed mode debonding problems. Comput. Mech., submitted.

MONOGRAPHS

- 1) **Zavarise G, Wriggers P, Nackenhorst U.** A Guide for Engineers to Computational Contact Mechanics. The TCN Series on Simulation Based Engineering and Sciences, Vol. 1. Consorzio TCN, Trento, Italy, 2006. ISBN-10: 88-95176-00-6, ISBN-13: 978-88-95176-00-0.
- 2) **Zavarise G, Wriggers P. (Eds.)** Trends in Computational Contact Mechanics – Lecture Notes in Applied and Computational Mechanics, Vol. 58, Springer, 2011. ISBN 978-3-642-22166-8.
- 3) **Zavarise G, Boso D. (Eds.)** Bytes And Science, (in honour of Bernhard Schrefler's 70th Birthday), CIMNE, Barcelona, Spain, 2012, ISBN: 978-84-940243-2-0.
- 4) **Zavarise G, Cinnella P, Campiti M. (Eds.)** PAMM - Proceedings in Applied Mathematics and Mechanics - Special Issue: 86th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Vol. 15, Issue 1, Pag. 1-748, Lecce October 2015. DOI: 10.1002/pamm.201510001

BOOK CHAPTERS

- 1) **Wriggers P, Zavarise G.** Computational contact mechanics, Encyclopedia of Computational Mechanics, (E. Stein, R. De Borst, T.J.R. Huges Eds.), Vol. 2 – Solids and Structures, John Wiley &

Sons, Chichester, 195-226, 2004. DOI: 10.1002/0470091355

- 2) **Zavarise G.** Computational modelling in contact mechanics. In: Advances in Contact Mechanics: Implications for Materials Science, Engineering & Biology (Buzio R, Valbusa U Eds.), Transworld Research Network, Trivandrum, Kerala, India, 2006; 43-81. ISBN 81-7895-211-1.
- 3) **Zavarise G, Bacchetta A.** Nail shooting on a steel support. In: Practical Applications Using Computational Contact Mechanics (Pérez-Aparicio, JL ed.), The TCN Series on Simulation Based Engineering and Sciences, Vol. 2. Consorzio TCN, Trento, Italy, 2006; 143-196. ISBN-10: 88-95176-01-4, ISBN-13: 978-88-95176-01-7.
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BOOK REFEREED CONTRIBUTIONS

- 1) **Zavarise G, Schrefler BA.** Numerical analysis of microscopically elastic contact problems. Proc. CMIS '94, Contact Mechanics Int. Symposium, (M. Raous, M. Jean, J.J. Moreau Eds.) Plenum Press, 305-312, 1994. ISBN 0-306-45065-8.
- 2) **Zavarise G, Boso D, Schrefler BA.** A contact formulation for electrical and mechanical resistance. Proc. III Contact Mechanics International Symposium (CMIS) (Martins JAC, Monteiro Marques MDP eds.). Solid Mechanics and its Applications vol. 103 (Gladwell GML Series ed.), Kluwer Academic Publisher, Dordrecht, The Netherlands, 211-218. 2001. ISBN: 1-4020-0811-2.
- 3) **Paggi M, Carpinteri A, Zavarise G.** A unified interface constitutive law for the study of fracture and contact problems in heterogeneous materials. Analysis and Simulation of Contact Problems (P. Wriggers, U. Nackenhorst Eds.), Lecture Notes in Applied Computational Mechanics, Springer, Berlin, Germany, Vol. 27, 297-304, 2006. ISBN: 3-540-31760-0, DOI: 10.1007/3-540-31761-9_33.
- 4) **Carpinteri A, Paggi M, Zavarise G.** A coupled contact and decohesion analysis of laminated beams. Proc. IUTAM Symposium on Computational Methods in Contact Mechanics, Hannover, 2006 (P. Wriggers and U. Nackenhorst eds.), Solid Mechanics and its Applications IUTAM Bookseries Vol. 3, 147-156, Springer, Berlin, 2007. ISBN: 978-1-4020-6404-3.
- 5) **Zavarise G, De Lorenzis L, Taylor RL.** On regularization of the convergence path for the implicit solution of contact problems. Recent developments and innovative applications in computational mechanics, Publication in honour of Peter Wriggers' 60th Birthday (D. Müller-Höpke, S. Löhnert and S. Reese eds.), Springer, Berlin, pp. 17-28, 2011, ISBN: 978-3-642-17483-4, DOI 10.1007/978-3-642-17484-1
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- 7) **Zavarise G, De Lorenzis L.** Extensions of the large penetration strategy for contact problems with large load steps. Bytes And Science, Publication in honour of Bernhard Schrefler's 70th Birthday (G. Zavarise, D. Boso eds.), CIMNE, Spain, 2012.
- 8) **Dimitri R, Zavarise G.** Numerical Study of Discrete Masonry Structures under Static and Dynamic Loading. Computational Modeling of Masonry Structures Using the Discrete Element Method (V. Sarhosis, K. Bagi, J.V. Lemos, G. Milani eds.), Cap. 11, pag. 254-291, IGI Global, USA, 2016. Doi: 10.4018/978-1-5225-0231-9

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- 1) **Wriggers P, Zavarise G.** Preface Lecture Notes in Applied and Computational Mechanics, Vol. 58, G. Zavarise and P. Wriggers, eds., Springer, pp. 79-100, 2011. DOI 10.1007/978-3-642-22167-5, ISBN: 978-3-642-22166-8, ISBN: 978-3-642-22166-8

CONFERENCE PROCEEDINGS

- 1) **Schrefler BA, Majorana C, Zavarise G, Del Vecchio C.** Structural study of the Columbus Telescope, Proc. ESO (European Southern Observatory) Conference on Very Large Telescopes, 201-211, Garching (Munich), Germany, 1988.
- 2) **Majorana C, Natali A, Zavarise G.** Investigation of non-linear contact problem in three dimensional finite element models, Proc. MSC/NASTRAN User's Conference, Rome, Italy, 1988.
- 3) **Piazza M, Zavarise G, Schrefler BA.** Steel bars for reinforced concrete: quality control and safety of construction, Proc. 2nd Int. Symp. on Quality Control of Concrete Structures (L. Taerwe, H. Lambotte eds.) , 551-559, Ghent, Belgium, 1991.
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- 5) **Zavarise G, Schrefler BA, Wriggers P.** Consistent formulation for thermomechanical contact based on microscopic interface laws, Proc. COMPLASS III, Int. Conf. on Comput. Plasticity, (D.R.J. Owen, E. Oñate, E. Hinton Eds.) Pineridge Press, 349-360, Barcelona, Spain, 1992.
- 6) **Schrefler BA, Zavarise G.** On contact problems with thermomechanical coupling, Proc. Int. Conf. on Education, Practice and Promotion of Computational Methods in Engineering Using Small Computers, Vol. II, 728-734, The Dalian University Press, Dalian, China, 1992.
- 7) **Zavarise G, Schrefler BA.** Simulation of thermomechanical contact problems, Proc. EUROSIM '92 Simulation Congress, (F. Maceri, G. Iazeolla Eds.), 401-406, Capri, Italy, 1992.
- 8) **Wriggers P, Zavarise G.** Recent trends in computational methods for contact problems, Proc. XI Polish Conference on Computational Methods in Mechanics – Vol. 3 (A. Borkowski Ed.), 127-148, Poland, 1993.
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- 10) **Zavarise G, Wriggers P.** Elasto-plastic contact problems solved by the cross-constraints method, Proc. IV Int. Conf. on Computational Plasticity, Barcelona, (D.R.J. Owen, E. Oñate, E. Hinton Eds.) Pineridge Press, 2261-2270, Barcelona, Spain, 1995.
- 11) **Schrefler BA, Zavarise G.** On cross-constraints method and physical contact laws, Proc. Int. Conf. on Optimisation of Finite Element Approximations, 85-94, St. Petersburg, Russia, 1995.
- 12) **Morandi Cecchi M, Pirozzi E, Zavarise G.** Numerical evaluation of special integrals with application to contact problems, Proc. Advanced Mathematical Tools in Metrology II, (P. Ciarlini, M.G. Cox, F. Pavese, D. Richter Eds.), 182-193, Oxford, UK, 1995.

- 13) **Zavarise G, Taylor RL.** Point-to-segment contact geometry revisited, Proc. Joint Conf. of Italian Group of Computational Mechanics and Ibero-Latin American Association of Computational Methods in Engineering, Padua, 1996.
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- 15) **Galtarossa A, Someda CG, Tommasini A, Schrefler BA, Zavarise G, Schiano M.** Stress birefringence in fiber ribbons, Proc. Int. Conf. on Optical Fiber Communication – OFC97, Conference on Optical Fiber Communication, Technical Digest Series, Dallas, 1997. DOI: 10.1109/OFC.1997.719873.
- 16) **Modena C, Zavarise G, Valluzzi MR.** Modelling of stone masonry walls strengthened by RC jackets, Proc. Computer methods in Structural Masonry – IV, 285-292, (G.N. Pande, J. Middleton, B. Kralj Eds.), E&FN Spon, London, Florence, Italy, September, 3-5, 1998. ISBN 9780419235408
- 17) **Boso D, Zavarise G, Schrefler BA.** A numerical formulation for electric-mechanical contacts based on microscopic interface laws, Proc. GIMC2002 Third Joint Conference of Italian Group of Computational Mechanics and Ibero-latin American Association of Computational Methods in Engineering, Giulianova, Italy, 2002.
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- 20) **Zavarise G, Nardin A, Schrefler BA.** Constitutive laws for metal friction, Proc. Euromech 435 – FWMF, Friction and Wear in Metal Forming, Valencienne, Frances, 2002.
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- 22) **Zavarise G, Nardin A, Schrefler BA.** Discrete methods for soil modeling, Proc. Enginsoft Conf. and User Meeting 2002, Vol. II - Virtual Prototyping Today: Industrial Impact and Future Trends, Bergamo, Italy, 2002.
- 23) **Majorana C, Bressanin S, Rigo Serra J, Zavarise G.** Analisi computazionale della meccanica del contatto di gusci in grandi spostamenti e rotazioni, Proc. GIMC2002 Third Joint Conference of Italian Group of Computational Mechanics and Ibero-latin American Association of Computational Methods in Engineering, Giulianova, Italy, 2002.
- 24) **Zavarise G.** Augmentation through linear regression in contact mechanics, Proc. TCN CAE 2003 Int. Conf. on CAE and Computational Technologies for Industry, 441-448, Cagliari, Italy, 2003.
- 25) **Carpinteri A, Paggi M, Zavarise G.** Theoretical and numerical investigation on internal instability phenomena in composite materials. Proc 11th Int. Conf. on Fracture (ICF11), Torino, Italy, paper n. 4991 on CD-ROM, 2005.
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- 27) **Carpinteri A, De Lorenzis L, Paggi M, Zavarise G.** Linear elastic fracture mechanics approach to edge debonding in plated beams. Proc. Int. Conf. on Challenges for Civil Constructions (CCC-

2008), on CD-ROM, Porto, Portugal, 2008.

- 28) **De Lorenzis L, Zavarise G.** Modeling of mixed-mode debonding in the peel test applied to superficial reinforcements, Proceedings CICE 2008, Zurich, Switzerland, July 2008.
- 29) **Majorana C, Salomoni V, Mazzucco G, Zavarise G.** Contact analysis of elastoplastic-damaged thin shells subject to finite displacements and rotations, (in Minisymposium "Numerical Simulation of Impact and Material Forming Problems" by Jean-Philippe Ponthot and C. Agelet de Saracibar, invited paper), Proc. 15th International Symposium, Plasticity 2009, St. Thomas, US Virgin Islands, Jan. 3-8, 2009.
- 30) **Salomoni V, Majorana C, Mazzucco G, Zavarise G.** Dynamic Thermo-Electro-Mechanical Nonlinear Behaviour of Shell-to-Shell in Contact, (invited paper) Proc. International Symposium on Plasticity 2010, jan. 3-8, St. Kitts, USA, 2010.
- 31) **De Lorenzis L, Dimitri R, Codacci-Pisanelli B, Zavarise G.** An innovative technique for strengthening of masonry edge vaults: experiments and modeling, Proc. Int. Congr. Domes in the World, Firenze, Italy, March, 2012.
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- 33) **De Lorenzis L, Palmieri V, Zavarise G.** Mesomechanical modeling of debonding failures in FRP-strengthened structures. Second Conf. on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, Istanbul, Turkey, 9-11 June, 2013.

EXTENDED ABSTRACTS AND POSTERS

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