Publications by B.A. Schrefler

Refereed Journal Publications

21. “Aids to research and engineering techniques: modelling, computer science, data banks and expert systems” (with M. Fremont), Materials and Structures, 21, (1988), 139-142.
31. “A composite beam model for the mechanical analysis of superconducting magnet pancakes” (with R. Gori), Fusion Engineering and Design, 13 (1990), 103-123.
46. “Constitutive laws for normal stiffness and thermal resistance of a contact element” (with G. Zavarise), Microcomputers in Civil Engineering, 8 (1993), 299-308.
49. “3-D finite element analysis of composite beams with parallel fibres based on homogenization theory” (with M. Lefik), Computational Mechanics, 14, 1, 2-15(1994).
63. “F.E. modelling of boundary layer correctors for composites, using the homogenization theory” (with M. Lefik), Engineering Computations, 13, 6 (1996), 31-42
67. “Use of homogenization theory to build a beam element which captures thermo-dynamic microscale properties” (with M.Lefik), Structural Engng and Mech., 4,6(1996), 613-630.


76. “Hygrothermal and mechanical model of concrete at high temperature” (with C. E. Majorana and V. Salomoni), Materials and Structures, 31 (1998), 378-386.


84. “Some observations about strain localisation and shear band formation in concrete samples” (with C. E. Majorana and V. Salomoni), J. Mat. Processing Technology, 78 (1998), 124-137.


114. “One-dimensional model of cable-in-conduit superconductors under cyclic loading using Artificial Neural Networks” (with M. Lefik), Fusion Engineering and Design, 60/2 (2002), 105-117.
124. “Modelling of hygro-thermal behaviour of concrete at high temperature with thermo-mechanical and mechanical material degradation” (with D. Gawin and F. Pesavento), CMAME, 192 (2003), 1731-1771.
144. “CO2 will probably not help to save Venice from the sea” (with C. Bonacina), Mechanics Research Communications, 32/6 (2005), 617-627.
146. “Experimental and finite element analysis of a hollow cylinder submitted to high temperatures” (with S. Dal Pont and A. Ehlacher), Materials and Structures, 38 (2005), 681-690.
152. “Analysis of the influence of the triplet helicoidal geometry on the strain state of a Nb3Sn based strand for ITER coils” (with D. P. Boso and M. Lefik), Cryogenics 45 (2005), 589–605.


186. “Ground displacement data around the city of Ravenna do not support uplifting Venice by water injection” (with G. Ricceri, V. achilli, A. Menin, and V.A. Salomoni), Terra Nova, 21 (2009), 144-150.
188. “Generalized self consistent homogenization using the finite element method” (with M. Lefik and D.P. Boso), ZAMM, 89(2009), 306-319.
191. “Recent developments in numerical homogenization”, (with D.P. Boso and M. Lefik), CAMES, 16 (2009), 161-183
203. “A three-dimensional staggered finite element approach for random parametric modeling of thermo-hygral coupled phenomena in porous media” (with F. Meftah and S. Dal Pont), NAG, 36, 574-596, 2012, DOI: 10.1002/nag.1017


Other major publications

4. “Copertura a tensostruttura su pianta esagonale per una chiesa parrocchiale a Padova” (with F. Navarra), Acciaio, n. 7 e 8 (1975), 316-318.
5. “Copertura e tensostruttura su pianta ellittica per una chiesa parrocchiale” (with F. Navarra and R. Vitaliani), Acciaio, n. 6 (1977), 283-285.
7. “Sul calcolo dei serbatoi a più celle con il metodo degli elementi finiti” (with L. Colussi), Giornale del Genio Civile, n. 7-8-9 (1978), 271-278.
22. ”Numerical modelling of thermo-hydro-mechanical (THM) problems in deforming porous media for subsurface systems” (with N.A. Rahman and S.A. Kamaruddin), J. Teknologi, 34(B)(2001), 31-44.
27. “Possible CO2 injection in aquifers below Venice” C. Bonacina), Revue Européenne de Génie Civil., 9 (2005), 809-816.
Books (Authored/Co-Authored, Edited/Co-Edited)


Book Chapters (Authored/Co-Authored)


Refereed Conference Proceedings

27. “Investigation of viscoelastic continua by means of the electromagnetic analogy” (with C.E. Majorana, and R. Vitaliani), Proc. of the Conf. on Progress of the Structural Analysis Problem since Castigliano, Politecnico di Torino, 1984, 47-59


134. “Modelling thermo-hygro-mechanical behaviour of high performance concrete in high temperature environment” (with D. Gawin, C.E. Majorana, and F. Pesavento), from Fracture Mechanics of
151. “Crisi strutturale di edifici di calcestruzzo soggetti a fuoco, alla luce di una nuova teoria di comportamento basata sulla meccanica dei materiali porosi multifase” (with C.E. Majorana, F.


165. “Some aspects on basic theories of strain localization analysis of multiphase porous media regularized constitutive model” (with H.W. Zhang, J.M. Qin, and L.Sanavia), invited lecture, Proc. WCCM VI, Sept. 5-10, 2004, Beijing, on CD.

166. “Mechanical and durability model of high performance concrete as multiphase porous material” (with F. Pesavento, D. Gawin, and C.E. Majorana), Proc. of WCCM VI in conjunction with Apcom '04, pp.10, September 5-10, 2004, Beijing, China.


184. “Modelling chemical processes in cement based materialsby means of multiphase porous media mechanics” (with F. Pesavento, D. Gawin, M. Koniorczyk), paper ESDA2012-82932, , ESDA2012,


Oral presentations (from 2004)

5. “Concrete at high temperatures” MACSI-net final meeting, Brussels, DG12, May 18, 2004.
27. “Concrete at high temperatures”, seminar, CEA, Saclay, France. March 29, 2006.
37. “Gekoppelte Mehrfeldprobleme und ihre numerische Lösung”, lectio doctoralis, Leibnitz University, Hanover, November 30, 2006.
42. “Superconducting cable modelling” (with D.P. Boso), Cadarache, ITER meeting, February 22, 2007.
55. “Stress measures in partially saturated porous media mechanics” seminar (with W. Gray, and F. Pesavento), Chuo University, Tokyo, November 29, 2007.
64. “Coupled problems in environmental engineering and in nuclear fusion technology”, invited lecture, EC-ECCOMAS Delegation meeting, DG-12, Bruxelles, December 18, 2008.
75. “Artificial Neural Networks to Model the Non-linear Behaviour of Hierarchical Composites” (with D.P. Bosso, M.J. Lefik), COMPLAS X, X International Conference on Computational Plasticity, Barcelona, September 2-4, 2009.
78. “A Thermodynamically Consistent Multiscale and Multiphysics Model for Concrete and its Offsprings for Industry” (with F. Pesavento, and D. Gawin), Seminar, Eindhoven University of Technology, October 6, 2009.
86. “Capillary effects related to compaction of gas reservoirs and CO\textsubscript{2} injection”, seminar, Center for Subsurface Modeling, ICES, UT at Austin, March 12, 2010.
87. “Multi-physics modelling of porous media”, seminar, Department of NanoMedicine and BioMedical Engineering (nBME), Health Science Center at Houston, The University of Texas, March 19, 2010.
88. “Artificial Neural Networks for Modeling of Material Behaviour”, Seminar Department of NanoMedicine and BioMedical Engineering (nBME), Health Science Center at Houston, The University of Texas, March 31, 2010.
97. “Capillary effects in hydrocarbon exploitation and CO₂ injection”, seminar, Department of Civil and Environmental Engineering, University of New South Wales, Sydney, August 5, 2010.
105. “Steps towards a real time solution of fire in tunnels”, Seminar, Faculty of Civil Engineering, Architecture and Environmental Engineering, Technological University of Lodz, May 14, 2011.
108. “Concrete at early ages and structural repair”, Seminar, Bauhaus Summer School on Simulation and Model Validation, Weimar, August 16, 2011.


133. “A multiphase model for tumor growth: interaction between tumor and host cells” (with G. Sciumè), lecture, Vinci II Workshop on Multiphysics Modelling of Concrete and Heterogeneous Materials, ENS Cachan, October 25, 2013.
143. “Tip advancement and pressure distribution in hydraulic fracturing” seminar, SISSA, Trieste, September 23, 2014
144. “Interaction between crack tip advancement velocity and fluid velocity in fracturing saturated porous media” seminar, University of Trento, December 16, 2015
147. “Beyond geomaterials”, lecture, Mumolade Winterschool, Marie Curie Training Network, Padua, January 20, 2015
152. “Meso- and macro-mechanical analysis of fracturing fluid saturated porous media”, seminar, Cullen College of Engineering, Department of Civil and Environmental Engineering, University of Houston, November 5, 2015.