

## 8. Bibliografía

- Ababneh, A., Xi, Y., Willam, K.**, “Multiscale modelling of the coupled moisture diffusion and drying shrinkage of concrete”, *Creep, Shrinkage and durability mechanics of concrete and other quasi-brittle materials* (Concreep 6), eds. Ulm, F.J., Bazant, Z.P. & Wittmann, F.H., 2001.
- Acker, P.**, “Micromechanical analysis of creep and shrinkage mechanisms”, *Creep, Shrinkage and Durability Mechanics of Concrete and Other Quasi-Brittle Materials* (Concreep6), eds. Ulm, F.J., Bazant, Z.P. & Wittmann, F.H., 2001.
- Acker, P., Ulm, F.J.**, “Creep and shrinkage of concrete: physical origins and practical measurements”, *Nuclear Engineering and Design*, 203, pp. 143-158, 2001.
- Alvaredo, A. M.**, “Crack formation under hygral or thermal gradients”, *Fracture Mechanics of Concrete Structures, Proc. 2<sup>nd</sup> Int. Conf.*, FRAMCoS 2, Zurich, Switzerland), ed. F. H. Wittmann, vol 2, pp. 1423-1441, 1995.
- Alvaredo, A. M., Wittmann, F. H.**, “Crack formation due to hygral gradients”, *1st Int. Symp. on Fracture Mechanics of Concrete Structures*, FraMCoS1, Breckenridge, Colorado, ed. Z.P. Bazant, pp. 960-966, 1992.
- Alvaredo, A. M., Wittmann, F. H.**, “Shrinkage as influenced by strain softening and crack formation”, Principal Lecture in *Creep and shrinkage of concrete*, eds. Z. P. Bazant & I. Carol, E&FN Spon, pp. 103-113, 1993.
- Andrade, C., Alonso, C., Sarría, J.**, “Corrosion rate evolution in concrete structures exposed to the atmosphere”, *Cement & Concrete Composites*, vol. 24, pp. 55-64, 2002.
- Andrade, C., Sarría, J., Cruz Alonso, M.**, “Influence of natural weathering on the relative humidity of concrete”, *Construction materials, Theory and application*. Hans-Wolf Reinhardt, Herausgegeben von R. Eligehausen, 1999.
- Armstrong, L. D. y Kingston, R. S .T.**, “Effect of moisture content changes on creep of wood”, *Nature*, 4716(185), pp. 862–3, 1960.
- Ayano, T., Wittmann, F. H.**, “Drying, moisture distribution, and shrinkage of cement-based materials”, *Materials and Structures*, vol. 35, pp. 134-140, 2002.
- Baroghel-Bouny, V., Mainguy, M., Lassabatere, T., Coussy, O.**, “Characterization and identification of equilibrium and transfer moisture properties for ordinary and high-performance cementitious materials”, *Cement and Concrete Research*, vol. 29, pp. 1225-1238, 1999.
- Bascoul, A.**, “State of the art report - Part 2: Mechanical micro-cracking of concrete”, *Materials and Structures*, vol. 29 pp. 67-78, 1996.
- Bazant, Z. P.**, “Input of creep and shrinkage characteristics for a structural analysis program”, *Materiaux et Constructions*, 15(88), pp. 283-290, 1982.
- Bazant, Z. P.**, “*Mathematical model of creep and shrinkage of concrete*”, Ed. Z. P. Bazant, John Wiley & Sons Ltd., 1988.
- Bazant, Z. P.**, “Prediction of concrete creep and shrinkage: past, present and future”, *Nuclear Engineering and Design*, 203, pp. 27-38, 2001.
- Bazant, Z. P. y Chern, J. C.**, “Concrete creep at variable humidity: constitutive law and mechanism”, *Materials and Structures*, vol. 18, n°103, pp. 1-19, 1985.
- Bazant, Z. P., Hauggaard, A. B., Baweja, S. y Ulm, F.J.**, “Microprestress-Solidification Theory for Concrete Creep. I: Aging and Drying Effects”, *ASCE Journal of Engineering Mechanics*, vol. 123 (11), pp. 1188-1194, 1997a.
- Bazant, Z. P., Hauggaard, A. B. y Baweja, S.**, “Microprestress-Solidification Theory for Concrete Creep. II: Algorithm and Verification”, *ASCE Journal of Engineering Mechanics*, vol. 123 (11), pp. 1195-1201, 1997b.

- Bazant, Z. P. y Najjar, L. J.**, “Nonlinear water diffusion in nonsaturated concrete”, *Materials and Structures*, vol. 1, pp. 461-473, 1972.
- Bazant, Z. P. y Planas, J.**, “*Fracture and Size Effect in Concrete and Other Quasibrittle Materials*”, Editado por CRC Press Inc., U.S., 1998.
- Bazant, Z. P. y Prasanna, S.**, “Solidification Theory for Concrete Creep. I: Formulation, II: Verification and Application”, *ASCE Journal of Engineering Mechanics*, vol. 115 (8), pp. 1691-1725, 1989.
- Bazant, Z. P. y Raftshol, W. J.**, “Effect of cracking in drying and shrinkage specimens”, *Cement and Concrete Research*, vol. 12, pp. 209-226, 1982.
- Bazant, Z. P. Sener, S. y Kim, J. K.**, “Effect of cracking on drying permeability and diffusivity of concrete”, *ACI Materials Journal*, vol. 84, pp. 351-357, 1987.
- Bazant Z. P., Tabbara, M. R., Kazemi, M. T. y Pijaudier-Cabot, G.**, “Random particle model for fracture of aggregate or fiber composites”, *ASCE Journal of Engineering Mechanics*, vol. 116, pp. 1686-1705, 1990.
- Bazant Z. P. y Xi, Y.**, “Drying creep of concrete: constitutive model and new experiments separating its mechanisms”, *Materials and Structures*, vol. 27, pp. 3-14, 1997.
- Beltzung, F y Wittmann, F. H.**, “Role of disjoining pressure in cement based materials”, *Cement and Concrete Research*, vol. 35, pp. 2371-2383, 2005.
- Benboudjema, F.**, “Modelisation des deformations differrees du beton sous sollicitacions biaxiales. Application aux enceintes de confinement de batiments reacteurs des centrals nucleaires”, PhD thesis (en francés), Université de Marne La Vallee, Francia, 2002.
- Benboudjema, F., Heinfli, G., Meftah, F., Sellier, A., Torrenti, J. M.**, “On the prediction of delayed strains for concrete subjected to drying and loading simultaneously”, *Creep, Shrinkage and Durability Mechanics of Concrete and Other Quasi-Brittle Materials* (Concreep6), eds. F. J. Ulm, Z. P. Bazant, F. H. Wittmann, pp. 245-250, 2001.
- Benboudjema, F., Meftah, F., Torrenti, J. M.**, “Drying shrinkage as a viscoelastic response due to internal pressures”, *Creep, Shrinkage and Durability of Concrete and Concrete Structures* (Concreep7), eds. G. Pijaudier-Cabot, B. Gérard, P. Acker, pp. 89-94, 2005a.
- Benboudjema, F., Meftah, F., Torrenti, J. M.**, “Interaction between drying, shrinkage, creep, and cracking phenomena in concrete”, *Engineering Structures*, vol. 27, pp. 239-250, 2005b.
- Benboudjema, F., Meftah, F., Torrenti, J. M.**, “Structural effects of drying shrinkage”, *Journal of Engineering Mechanics*, vol. 131(11), pp. 1195-1199, 2005c.
- Berkowitz, B.**, “Characterizing flow and transport in fractured geological media: A review”, *Advances in Water Resources*, vol. 25, pp. 861-884, 2002.
- Bisschop, J.**, “Drying shrinkage microcracking in cement-based materials”, PhD thesis, Tech. Univ. Delft, Netherlands, 2002.
- Bisschop, J., van Mier, J. G. M.**, “How to study drying shrinkage microcracking in cement-based materials”, *Cement and Concrete Research*, vol. 32, pp. 279-287, 2002a.
- Bisschop, J., van Mier, J. G. M.**, “Effect of aggregates on drying shrinkage microcracking in cement-based composites”, *Materials and Structures*, vol. 35, pp. 453-461, 2002b.
- Bolander, J. y Berton, S.**, “Simulation of shrinkage induced cracking in cement composite overlays”, *Cement and concrete composites*, vol. 26, pp. 861-871, 2004.
- Bolander, J., Berton, S. y Emerick, E.**, “Inclusion interaction effects on concrete creep”, *Creep, Shrinkage and Durability Mechanics of Concrete and Other Quasi-Brittle Materials* (Concreep6), eds. F. J. Ulm, Z. P. Bazant, F. H. Wittmann, pp. 89-94, 2001.

- Boone, T. J. e Ingraffea, A.R.**, “A numerical procedure for simulation of hydraulic-driven fracture propagation in poroelastic media”, *International Journal of Numerical and Analytical Methods in Geomechanics*, vol. 14, pp. 27-47, 1990.
- Brooks, J. J.**, “A theory for drying creep of concrete”, *Magazine of concrete research*, vol. 53, nº1, pp. 51-61, 2001.
- Caballero, A.**, “3D meso-mechanical numerical analysis of concrete fracture using interface elements”, PhD thesis, UPC, Barcelona, España, 2005.
- Carmeliet, J., Delerue, J. F., Vandersteen, K., Roels, S.**, “Three-dimensional liquid transport in concrete cracks”, *International Journal for Numerical and Analytical Methods in Geomechanics*, vol. 28, pp. 671-687, 2004.
- Carol, I. y Bazant, Z. P.**, “Viscoelasticity with aging caused by solidification of non-aging constituent”, *ASCE Journal of Engineering Mechanics*, vol. 119 (11), pp. 2252-2269, 1993.
- Carol, I., López, C. M. y Roa, O.**, “Micromechanical analysis of quasi-brittle materials using fracture-based interface elements”, *Int. J. Numer. Meth. in Engrg*, vol. 52, pp. 193-215, 2001.
- Carol, I. y López, C.M.**, “Failure analysis of quasi-brittle materials using interface elements”, en *Mechanics of quasi-brittle materials and structures*, eds. G. Pijaudier Cabot, Z. Bittnar y B. Gérard, Hermes: Paris, pp.289-305, 1999.
- Carol, I. y Prat, P.**, “A statically constrained microplane model for smeared analysis of concrete cracking”, en Bicanic, N. y Mang, H. (Eds.), Pineridge Press, *Computer Aided analysis and design of concrete structures*, Austria, pp. 919-930, 1990.
- Carol, I., Prat, P. y López, C. M.**, “A normal/shear cracking model. Application to discrete crack analysis”, *Journal of Engineering Mechanics*, vol. 123 (8), pp. 765-773, 1997.
- Cerný, R. y Rovnaníková, P.**, “Transport processes in concrete”, Spon Press, 2002.
- Chatterji, S.**, “Probable mechanisms of crack formation at early ages of concrete”, *Int. Conference of Concrete at Early Ages*, École Nationale de Ponts et Chaussées, Paris, pp. 34-38, 1982.
- Ciancio, D., Lopez, C., Carol, I. & Cuomo, M.**, “New results in meso-mechanical modeling of concrete using fracture-based zero-thickness interface elements”, *Computational Modelling of Concrete Structures (EuroC)*, Balkema, pp.171–177, 2003.
- Coussy, O.**, “Mechanics of porous continua”, John Wiley & Sons, 1995.
- Coussy, O.**, “Poromechanics”, John Wiley & Sons, 2004.
- Coussy, O., Eymard, R. y Lassabatère, T.**, “Constitutive modelling of unsaturated drying deformable materials”, *Journal of Engineering Mechanics*, vol. 124(6), pp. 658-667, 1998.
- Cundall, P. y Strack, O.**, “A discrete numerical model for granular assemblies”, *Geotechnique*, vol. 29(1), pp. 47-65, 1979.
- Cusatis, G., Bazant, Z. P. y Cedolin, L.**, “3D Lattice Model for dynamic simulations of creep, fracturing and rate effect in concrete”, *Creep, Shrinkage and Durability Mechanics of Concrete and Other Quasi-Brittle Materials (Concreep6)*, eds. F. J. Ulm, Z. P. Bazant, F. H. Wittmann, pp. 113-118, 2001.
- Damgaard Jensen, A. y Chatterji, S.**, “State of the art report on micro-cracking and lifetime of concrete”, *Materials and Structures*, vol. 29, pp. 3-8, 1996.
- Day, R. L., Cuffaro, P., Illston, J.M.**, “The effect of drying on the drying creep of hardened cement paste”, *Cement and Concrete Research*, vol. 14 (3), pp. 329-338, 1984.
- de Borst, R., Remmers, J. J., Needleman, A. y Abellan, M. A.**, “Discrete vs smeared crack models for concrete fracture: bridging the gap”, *Int. J. Numer. Anal. Meth. Geomech.*, vol. 28, pp. 583–607, 2004.

**EH-91.** Instrucción para el proyecto y la ejecución de obras de hormigón en masa o armado, Ministerio de Obras Públicas y Transportes, Madrid, 1991.

**Gamble, B. R. y Parrot, L. J.,** “Creep of concrete in compression during drying and wetting”, *Magazine of Concrete Research*, vol. 104 (30), pp. 129-138, 1978.

**Garolera D.,** “Estudio microestructural de la producción de arena en pozos”, *Proyecto de Tesis Doctoral en Ingeniería Civil*, UPC, Barcelona, España, 2005.

**Garolera D., López, C. M. y Carol. I.,** “Micromechanical analysis of the rock sanding problem”, *Journal of the Mech. Behavior of Materials*, vol. 16(1-2), pp. 45-54, 2005.

**Gawin, D., Pesavento, F. y Schrefler, B. A.,** “Modelling creep and shrinkage of concrete by means of effective stresses”, *Materials and Structures*, vol. 40(6), pp. 579-591, 2007.

**George, P. L. y Borouchaki, H.,** “Delaunay Triangulation and Meshing. Application to finite elements”, Hermes, Paris, 1998.

**Gérard, B., Breyse, D., Ammouche, A., Houdusse, O., Didry, O.,** “Cracking and permeability of concrete under tension”, *Materials and Structures*, vol. 29, pp. 141-151, 1996.

**Gérard, B. y Marchand, J.,** “Influence of cracking on the diffusion properties of cement-based materials. Part I: Influence of continuous cracks on the steady-state regime”, *Cement and Concrete Research*, vol. 30, pp. 37-43, 2000.

**Goltermann, P.,** “Mechanical predictions of concrete deterioration-Part 1: Eigenstresses in concrete”, *ACI Materials Journal*, vol. 91(6), pp. 543-550, 1994.

**Goltermann, P.,** “Mechanical predictions of concrete deterioration-Part 2: Classification of crack patterns”, *ACI Materials Journal*, vol. 92 (1), pp. 58-63, 1995.

**Granger, L.,** “Comportement différé du béton dans les enceintes de centrals nucléaires: Analyse et modélisation”, PhD thesis, ENPC, Paris, Francia, 1996.

**Granger, L., Torrenti, J. M., Acker, P.,** “Thoughts about drying shrinkage: Scale effects and modelling”, *Materials and Structures*, vol. 30, pp. 96-105, 1997a.

**Granger, L., Torrenti, J. M., Acker, P.,** “Thoughts about drying shrinkage: Experimental results and quantification of structural drying creep”, *Materials and Structures*, vol. 30, pp. 588-598, 1997b.

**Grasberger, S. y Meschke, G.,** “Numerical simulation of coupled thermo-hygro-mechanical processes within concrete”, *Creep, Shrinkage and Durability Mechanics of Concrete and Other Quasi-Brittle Materials (Concreep6)*, eds. F. J. Ulm, Z. P. Bazant, F. H. Wittmann, pp. 165-170, 2001.

**Häfner, S., Eckardt, S. y Könke, C.,** “A geometrical inclusion-matrix model for the finite element analysis of concrete at multiple scales”, *Proceedings of the 16th IKM 2003*, eds. Gürlebeck, Hempel and Könke, Weimar, Germany, June 10-12, 2003.

**Han, M. Y. y Lytton, R. L.,** “Theoretical prediction of drying shrinkage of concrete”, *ASCE Journal of Materials in Civil Engineering*, pp. 204-207, 1995.

**Hearn, N.,** “Effect of shrinkage and load-induced cracking on water permeability of concrete”, *ACI Materials Journal*, vol. 96 (2), pp. 234-241, 1999.

**Hillerborg, A., Modeer, M., Petersson, P.E. y Needleman, A.,** “Analysis of crack formation and crack growth in concrete by means of fracture mechanics and finite elements”, *Cement Concrete Research*, vol. 6, pp. 773-782, 1976.

**Hsu, T. T. C.,** “Mathematical analysis of shrinkage stresses in a model of hardened concrete”, *Journal of the American Concrete Institute*, vol. 60(3), pp. 371-390, 1963.

**Hsu, T. T. C., Slate, F., Sturman, G. y Winter, G.,** “Microcracking of plain concrete and the shape of the stress-strain curve”, *Journal of the American Concrete Institute*, vol. 60, 209-224, 1963.

**Hua, C., Ehrlicher, A. y Acker, P.**, “Analyses and models of the autogeneous shrinkage of hardening cement paste. II. Modelling at scale of hydrating grains”, *Cement and Concrete Research*, vol. 27, pp. 245-258, 1997.

**Hubert, F. X., Burlion, N. y Shao, J. F.**, “Drying of concrete: modelling of a hydric damage”, *Materials and Structures*, vol. 36, pp. 12-21, 2003.

**Hwang C. L. y Young, J. F.**, “Drying shrinkage of Portland cement pastes. I. Microcracking during drying”, *Cement and Concrete Research*, vol. 14, pp. 585-594, 1984.

**Jankovic, D., Küntz, M. y van Mier, J. G. M.**, “Numerical analysis of moisture flow and concrete cracking by means of lattice type models”, *Fracture Mechanics of Concrete Structures*, eds. de Borst, et al., Swets & Zeitlinger, 2001.

**Jirasek, M. y Bazant, Z. P.**, “Particle model for fracture and statistical micro-macro correlation of material constants”, *Fracture Mechanics of Concrete Structures, Proc. 2<sup>nd</sup> Int. Conf., FRAMCoS 2, Zurich, Switzerland*, ed. F. H. Wittmann, pp. 955-964, 1995.

**Kanna, V., Olson, R. A. y Jennings, H. M.**, “Effect of shrinkage and moisture content on the physical characteristics of blended cement mortars”, *Cement and Concrete Research*, vol. 28(10), pp. 1467-1477, 1998.

**Koufopoulos, T. y Theocaris, P. S.**, “Shrinkage Stresses in Two-Phase Materials”, *Journal of composite materials*, vol. 3, pp. 308-320, 1969.

**Kovler, K.**, “A new look at the problem of drying creep of concrete under tension”, *Journal of materials in civil engineering*, vol. 11(1), pp. 84-87, 1999.

**Kovler, K.**, “Drying creep of stress-induced shrinkage?”, *Creep, Shrinkage and Durability Mechanics of Concrete and Other Quasi-Brittle Materials (Concreep6)*, eds. F. J. Ulm, Z. P. Bazant, F. H. Wittmann, pp. 67-72, 2001.

**Kreijger, P. C.**, “The skin of concrete. Composition and properties”, *Materials and Structures*, vol. 17(4), pp. 275-283, 1984.

**Lilliu, G. y van Mier, J. G. M.**, “3d lattice type fracture model for concrete”, *Engineering Fracture Mechanics*, vol. 70(7/8), pp. 927-941, 2003.

**Locoge, P., Massat, M., Ollivier, J.P., Richet, C.**, “Ion diffusion in microcracked concrete”, *Cement and Concrete Research*, vol. 22, pp. 431-438, 1992.

**López, C. M.**, “Análisis microestructural de la fractura del hormigón utilizando elementos finitos tipo junta. Aplicación a diferentes hormigones”, PhD thesis, UPC, Barcelona, España, 1999.

**Lopez, C., Carol, I. y Aguado, A.**, “Meso-structural study of concrete fracture using interface elements. I: numerical model and tensile behavior”, *Materials and Structures*, vol. 41(3), pp. 583-599, 2008a.

**Lopez, C., Carol, I. y Aguado, A.**, “Meso-structural study of concrete fracture using interface elements. II: compression, biaxial and Brazilian test”, *Materials and Structures*, vol. 41(3), pp. 601-620, 2008b.

**López, C. M., Carol, I., Murcia, J. y Ciancio, D.**, “Modelización microestructural de la fractura del hormigón. II: Influencia de la variación de la altura de la probeta y estudios de fluencia básica”, *Anales de Mecánica de la Fractura*, 2002.

**López, C.M., Idiart, A. E. y Carol, I.**, “Meso-mechanical Analysis of Concrete Deterioration Including Time Dependence”, *Computational Plasticity VIII*, eds. D. Owen, E. Oñate y B. Suárez, Barcelona, España, pp. 1059-1062, 2005a.

**López, C.M., Segura, J.M., Idiart, A. E. y Carol, I.**, “Mesomechanical Modeling of Drying Shrinkage Using Interface Elements”. *Creep, Shrinkage and Durability of Concrete and Concrete Structures (Concreep7)*, eds. G. Pijaudier-Cabot, B. Gérard y P. Acker, Nantes, France, pp. 107-112, 2005b.

- Martinola, G., Sadouki, H. y Wittmann F. H.**, “Numerical model for minimizing risk of damage in repair system”, *Journal of Materials in Civil Engng.*, vol. 13(2), pp. 121-129, 2001.
- Mainguy, M., Coussy, O. y Baroghel-Bouny, V.**, “Role of air pressure in drying of weakly permeable materials”, *Journal of Engineering Mechanics*, vol. 127(6), pp. 582-592, 2001.
- Mc Creath, D. R., Newman, J. B. y Newman, K.**, “The influence of aggregate particles on the local strain distribution and fracture mechanism of cement paste during drying shrinkage”, *Materials and Structures*, vol. 2(7), pp. 73-85, 1969.
- Mehta, P. K., Monteiro, P. J. M.**, “*Concrete: Microstructure, Properties, and Materials*”, Mc Graw-Hill, 3era edición, 2006.
- Mehta, P. K., Monteiro, P. J. M.**, “*Concreto, Estrutura, Propiedades e Materiais*”, Editorial Pini, 2da edición, 1994.
- Neville, A. M.**, “*Properties of concrete*”, Pearson Prentice Hall, 4<sup>th</sup> edition, 2002.
- Ngo, D. y Scordelis, A.**, “Finite element analysis of reinforced concrete beams”, *Journal of the ACI*, vol. 64(14), pp. 152-163, 1967.
- Norling, K.**, “Self-desiccation in concrete”, Licenciante Thesis, Chalmers University of Technology, Goteborg, Sweden, 1994.
- Norling, K.**, “Moisture Conditions in High Performance Concrete”, PhD Thesis, Chalmers University of Technology, Goteborg, Sweden, 1997.
- Ozbolt, J. y Reinhardt, H.W.**, “Creep-cracking interaction of concrete – three dimensional finite element model”, *Creep, Shrinkage and Durability Mechanics of Concrete and Other Quasi-Brittle Materials (Concreep6)*, eds. F. J. Ulm, Z. P. Bazant, F. H. Wittmann, pp. 221-228, 2001.
- Pérez-Foguet, A., Rodríguez-Ferrán, A. y Huerta, A.**, “Consistent tangent matrices for substepping schemes”, *Computer methods in applied mechanics and engineering*, vol. 190, pp. 4627-4647, 2001.
- Pickett, G.**, “The effect of change in moisture content on the creep of concrete under a sustained load”, *ACI Journal*, vol. 38, pp. 333-356, 1942.
- Pihlajavaara, S. E. y Väisänen, M.**, “Numerical solution of diffusion equation with diffusivity concentration dependent”, Publ. n° 87, State Institute for Technical Research, Helsinki, 1965.
- Prat, P.C., Gens, A., Carol, I., Ledesma, A. y Gili, J.A.**, “DRAC: A computer software for the analysis of rock mechanics problems”, *Application of computer methods in rock mechanics*, H. Liu, ed., pp. 1361 - 1368, Xian, China. Shaanxi Sci. & Tech. Press, 1993.
- Rashid, Y. R.**, “Analysis of prestressed concrete pressure vessels”, *Nuclear Engineering and Design*, vol. 7, pp. 334-344, 1968.
- Reid, S. G.**, “Deformation of concrete due to drying creep”, *Creep and shrinkage of concrete*, eds. Z. P. Bazant, I. Carol, E&FN Spon, pp. 39-44, 1993.
- Ringot, E. y Bascoul, A.**, “About the analysis of microcracking in concrete”, *Cement and concrete composites*, vol. 23, pp. 261-266, 2001.
- Roa, Olga**, “Análisis microestructural del comportamiento mecánico del hueso trabecular”, PhD thesis, UPC, Barcelona, España, 2004.
- Roa, O., Lopez, C., Maranzana, F., Carol, I. y Contro, R.**, “On the use of generated geometries for the numerical analysis of trabecular bone specimens”, *Computer Methods in Biomech. and Biomedical Engng., Proc Int. Conf.*, WSAtkins Sci. & Tech., 2002.
- Roelfstra, P., Sadouki, H. y Wittmann, F. H.**, “Le béton numerique”, *Materials and Structures*, vol. 18, pp. 327-335, 1985.

- Roncero, J.**, “Effect of superplasticizers on the behavior of concrete in the fresh and hardened states: implications for high performance concretes”, PhD thesis, ETSECCP, UPC, Barcelona, España, 1999.
- Sadouki, H. y van Mier, J. G. M.**, “Meso-level analysis of moisture flow in cement composites using a lattice-type approach”, *Materials and Structures*, vol. 30, pp. 579-587, 1997.
- Sadouki, H. y Wittmann, F. H.**, “Damage in a composite material under combined mechanical and hygral load”, *Lecture Notes in Physics, Continuous and discontinuous modelling of cohesive-frictional materials*, Springer-Verlag, Berlin Heidelberg, vol. 568/2001, pp. 293-307, 2001.
- Sancho, J. M., Planas, J., Gálvez, J. C., Reyes, E. y Cendón, D. A.**, “An embedded cohesive crack model for finite element analysis of mixed mode fracture of concrete”, *Fatigue Fracture Engng Mater Struct*, vol. 29, pp. 1056-1065, 2006.
- Schlangen, E., Koenders, E. A. B. y van Breugel, K.**, “Influence of internal dilation on the fracture behaviour of multi-phase materials”, *Engineering Fracture Mechanics*, vol.74, pp. 18-33, 2007.
- Schlangen, E. y van Mier, J. G. M.**, “Micromechanical Analysis of Fracture of Concrete”, *International Journal of damage Mechanics*, vol. 1(4), pp 435-454, 1992.
- Schrefler, B. A., Gawin, D. y Pesavento, F.**, “Concrete as a multiphase material, with applications to high temperatures, durability and concrete at early ages”, *Creep, Shrinkage and Durability Mechanics of Concrete and Other Quasi-Brittle Materials (Concreep6)*, eds. F. J. Ulm, Z. P. Bazant, F. H. Wittmann, pp. 149-158, 2001.
- de Schutter, G. y Taerwe, L.**, “Random particle model for concrete based on Delaunay triangulation”, *Materials and Structures*, vol. 26, pp. 67-73, 1993.
- Secchi, S. y Simoni, L.**, “Cohesive fracture mechanics for a multi-phase porous medium”, *Engineering Computations*, vol. 5, pp. 675-698, 2003.
- Segura, J.M.**, “Coupled HM analysis using zero-thickness interface elements with double nodes”, PhD thesis, UPC, Barcelona, España, 2007.
- Segura, J.M. y Carol, I.**, “On zero-Thickness Interface Elements for Diffusion Problems”; *Int. J. for Num. Anal. Meth. in Geomech.*, vol. 28(9), pp. 947-962, 2004.
- Shiotani, T., Bisschop, J., van Mier, J.G.M.**, “Temporal and spatial development of drying shrinkage cracking in cement-based materials”, *Engineering fracture mechanics*, vol. 70, pp. 1509-1525, 2003.
- Sicard, V., Cubaynes, J. F. y Pons, G.**, “Modélisation des déformations différées des bétons à hautes performances: relation entre le retrait et le fluage”, *Materials and Structures*, vol. 29, pp. 345-353, 1996.
- Sicard, V., François, R., Ringot, E. y Pons, G.**, “Influence of creep and shrinkage on cracking in high strength concrete”, *Cement and Concrete Research*, vol. 22, pp. 159-168, 1992.
- Sisavath, S., Al-Yaarubi, A., Pain, C. y Zimmerman, R.**, “A simple model for deviations from the cubic law for a fracture undergoing dilation or closure”, *Pure and Applied Geophysics*, vol. 160, pp. 1009-1022, 2003.
- Snow, D.**, “A parallel plate model of fractured permeable media”, PhD Dissertation, University of California, Berkeley-CA 1965.
- Stankowski, T.**, “Numerical simulation of progressive failure in particle composites”, PhD thesis, University of Colorado, Boulder, USA, 1990.
- Svensson, S. y Toratti, T.**, “Mechanical Response of Wood Perpendicular to Grain when subjected to Changes of Humidity”, *Wood science and technology*, vol. 136, pp. 145-156, 2002.

**Tamtsia, B. T., Beaudoin, J. J.**, “Basic creep of hardened cement paste. A re-examination of the role of water”, *Cement and Concrete Research*, vol. 30, pp. 1465-1475, 2000.

**Thelandersson, S., Martensson, A., Dahlblom, O.**, “Tension softening and cracking in drying concrete”, *Materials and Structures*, vol. 21, pp. 416-424, 1988.

**Tijssens, M. G. A., Sluys, L. J. y van der Giessen, E.**, “Simulation of fracture cementitious composites with explicit modeling of microstructural features”, *Engineering Fracture Mechanics*, vol. 68, pp. 1245-1263, 2001.

**Torrenti, J. M., Granger, L., Diruy, M. Y Genin, Pierrick**, “Modelling Concrete Shrinkage under Variable Ambient Conditions”, *ACI Materials Journal*, vol. 96(1), pp. 35-39, 1999.

**Torrenti, J. M. y de Sa, C.**, “Finite element modeling of drying shrinkage”, *ASCE Conference on Engineering Mechanics*, Austin, 21-24 May, 2000.

**Tsubaki, T., Das, M. K., Shitaba, K.**, “Cracking and damage in concrete due to nonuniform shrinkage”, *1st Int. Symp. on Fracture Mechanics of Concrete Structures (FraMCoS1)*, Breckenridge, Colorado, ed. Z.P. Bazant, pp. 971-976, 1992.

**Ulm, F. J., Le Maou, F. y Boulay, C.**, “Creep and shrinkage coupling: New Review of some Evidence”, *Revue française de génie civil*, vol. 3(3-4), pp. 21-37, 1999.

**van Mier, J. G. M.**, “Strain-softening of concrete under multiaxial loading conditions”, PhD thesis, Eindhoven University of Technology, Eindhoven, Holanda, 1984.

**van Mier, J. G. M.**, “Fracture Processes of Concrete”, CRC Press, 1997.

**van Mier, J. G. M., Shah, S. P., Arnaud, M., Balayssac, J.P., Bascoul, A., Choi, S., Dasenbrock, D., Ferrara, G., French, C., Gobbi, M.E., Karihaloo, B.L., König, G., Kotsovos, M.D., Labuz, J., Lange-Kornbak, D., Markeset, G., Pavlovic, M.N., Simsch, G., Thienel, K-C., Turatsinze, A., Ulmer, M., van Gee1, H.J.G.M., van Vliet, M.R.A y Zissopoulos, D.**, “Strain-softening of concrete in uniaxial compression”, Report of the Round Robin Test carried out by RILEM TC 148-SSC, *Materials and Structures*, vol. 30, pp. 195-209, 1997.

**van Zijl, G. P. A. G.**, “Computational modelling of masonry creep and shrinkage”, PhD thesis, Technische Universiteit Delft, Holanda, 2000.

**Vonk, R.**, “Softening of concrete loaded in compression”, PhD thesis, Technische Universiteit Eindhoven, Eindhoven, Holanda, 1992.

**Vonk, R. A., Rutten, H. S., van Mier, J. G. M. y Fijneman, H. J.**, “Micromechanical simulation of concrete softening”, *Fracture Processes in Concrete, Rock and Ceramics*, eds. Van Mier, J.G.M., Rots, J.G. y Bakker, A., E&FN Spon, 1991.

**Walraven, J. C.**, “Aggregate interlock: a theoretical and experimental analysis”, PhD thesis, TU Delft, Delft University Press, 1980.

**Wang, J. y Huet, C.**, “A numerical model for studying the influences of pre-existing microcracks and granular character on the fracture of concrete materials and structures”, *Micromechanics of Concrete and Cementitious Composites*, ed. Huet, C., Presses Politechniques et Universitaires Romandes, Lausanne, Suiza, p. 229, 1993.

**Witasse, R.**, “Contribution à la compréhension du comportement d’une coque d’aéroréfrigérant vieilli: définition d’un état initial, influence des effets différés sous sollicitations hydromécaniques”, These de doctorat, INSA, Lyon, 2000.

**Wittmann, F. H.**, “Creep and shrinkage mechanisms”, Creep and shrinkage in concrete structures, Capítulo 6, eds. Z. P. Bazant y F. H. Wittmann, 1982.

**Wittmann, F. H.**, “On the influence of stress on shrinkage of concrete”, *Creep and shrinkage of concrete*, eds. Z. P. Bazant & I. Carol, E&FN Spon, pp. 151-157, 1993.



- Wittmann, F. H.**, “Influence of drying induced damage on the hygral diffusion coefficient”, *Fracture Mechanics of Concrete Structures, Proc. 2<sup>nd</sup> Int. Conf., FRAMCoS 2*, Zurich, Switzerland, ed. F. H. Wittmann, vol 2, pp. 1519-1524, 1995.
- Wittmann, F. H. y Roelfstra, P. E.**, “Total deformation of loaded drying concrete”, *Cement and Concrete Research*, vol. 10, pp. 601-610, 1980.
- Wriggers, P. y Moftah, S. O.**, “Mesoscale models for concrete: Homogenisation and damage behaviour”, *Finite Elements in Analysis and Design*, vol. 42, pp. 623-636, 2006.
- Xi, Y., Bazant, Z. P. y Jennings, H. M.**, “Moisture Diffusion in Cementitious Materials: Adsorption Isotherms”, *Advanced Cement Based Materials*, vol. 1, pp. 248-257, 1994a.
- Xi, Y., Bazant, Z. P., Molina, L., Jennings, H. M.**, “Moisture Diffusion in Cementitious Materials: Moisture Capacity and Diffusivity”, *Advanced Cement Based Materials*, vol. 1, pp. 258-266, 1994b.
- Xi, Y. y Nakhi, A.**, “Composite damage models for diffusivity of distressed materials”, *ASCE Journal of Materials in Civil Engineering*, pp. 286-295, 2005.
- Young, J. F.**, “Physical mechanisms and their mathematical descriptions”, *Mathematical model of creep and shrinkage of concrete*, Ed. Z. P. Bazant. John Wiley & Sons Ltd., 1988.
- Yuan, Y. y Wan, Z. L.**, “Prediction of cracking within early-age concrete due to thermal, drying and creep behavior”, *Cement and Concrete Research*, vol. 32, pp. 1053-1059, 2002.
- Yurtdas, I., Burlion, N. y Skoczylas, F.**, “Experimental characterisation of the drying effect on uniaxial mechanical behaviour of mortar”, *Materials and Structures*, vol. 37(3), pp. 170-176, 2004a.
- Yurtdas, I., Burlion, N. y Skoczylas, F.**, “Triaxial mechanical behaviour of mortar: Effects of drying”, *Cement and Concrete Research*, vol. 34, pp. 1131-1143, 2004b.
- Yurtdas, I., Burlion, N. y Skoczylas, F.**, “Microcracking of mortars during drying: effects on delayed behaviours”, *Creep, Shrinkage and durability of concrete and concrete Structures (Concreep7)*, eds. G. Pijaudier-Cabot, B. Gérard, P. Acker, Nantes, Francia, 2005.
- Yurtdas, I., Peng, He, Burlion, N. y Skoczylas, F.**, “Influence of water by cement ratio on mechanical properties of mortars submitted to drying”, *Cement and Concrete Research*, vol. 36, pp. 1286-1293, 2006.
- Zheng, J. J., Li, C. Q. y Zhao, L. Y.**, “Simulation of Two-Dimensional Aggregate Distribution with Wall Effect”, Technical Note, *ASCE Journal of Materials in Civil Engineering*, vol. 15(5), pp. 506-510, 2003.