
References

- [AA] Aitharaju, V.R. and Averill, R.C., An assessment of zig-zag kinematic displacement models for the analysis of laminated composites. *Mech. Composite Mat. and Struct.*, **6**, 1–26, 1999a.
- [AA2] Aitharaju, V.R. and Averill, R.C., C^0 zig-zag finite element for analysis of laminated composite beams. *J. Engineering Mechanics, ASCE*, 323–330, 1999b.
- [AB] Agarwal, B.B. and Broutman, L.J., *Analysis and Performance of Fiber Composites*. J. Wiley, 1980.
- [AC] Adini, A. and Clough, R.W., Analysis of plate bending by the finite element method. *Nat. Sci. Found*, G7337, 1961.
- [AD] Abel, J.F. and Desai, C.S., Comparison of finite elements for plate bending. *Journal of Structural Divison, ASCE*, **98**, ST9, 2143–48, 1972.
- [AF] Arnold, D.N. and Falk, S.N., An uniformly accurate finite element method for the Mindlin-Reissner plate. Preprint Series No. 307, Inst. for Mathematics and its Applicat., Univ. of Minnesota, April, 1987.
- [AFS] Argyris, J.H., Fried, I. and Scharpf, D.W., The TUBA family of plate elements for the matrix displacement method. *Aeronautical Journal of the Royal Aeron. Society*, **72**, 701–9, 1968.
- [AG] Ashwell, D.G. and Gallagher, R.H., (eds.), *Finite element method for thin shells and curved members*. J. Wiley, 1976.
- [Ah] Ahmad, S., *Curved finite elements in the analysis of solid shell and plate structures*. Ph.D. Thesis, Univ. of Wales, Swansea, 1969.
- [AHM] Argyris, J.H., Haase, M. and Mlejnek, H.P., On an unconventional but natural formulation of a stiffness matrix. *Comput. Methods Appl. Mech. Engrg.*, **22**, 1–2, 1980.
- [AHMS] Argyris, J.H., Haase, M., Mlejnek, H.P. and Schmolz, P.K., TRUNC for shells. An element possibly to the taste of Bruce Irons, *Int. J. Numer. Meth. Engrng.*, **22**, 93–115, 1986.
- [AIZ] Ahmad, S., Irons, B.M. and Zienkiewicz, O.C., Curved thick shell and membrane elements with particular reference to axisymmetric problems.

- Proc. 2nd Conf. Matrix Methods in structural Mech.*, Air Force Inst. of Technol., Wright-Patterson A.F. Base, Ohio, 1968.
- [AIZ2] Ahmad, S., Irons, B.M. and Zienkiewicz, O.C., Analysis of thick and thin shell structures by curved finite elements. *Int. J. Numer. Meth. Engng.*, **2**, 419–451, 1970.
- [Ak] Akoussah, E., *Analyse non linéaire des structures à parois minces par éléments finis et son application aux bâtiments industriels*. Thèse de Doctorat, Université Laval, 1987.
- [Al] Allman, D.L., A compatible triangular element including vertex rotations for plane elasticity analysis. *Computers and Structures*, **19**, 1–8, 1984.
- [Al2] Allman, D.L., A quadrilateral finite element including vertex rotations for plane elasticity analysis. *Int. J. Numer. Meth. Engng.*, **26**, 717–730, 1988.
- [Al3] Allman, D.L., Evaluation of the constant strain triangle with drilling rotations. *Int. J. Numer. Meth. Engng.*, **26**, 2645–2655, 1988.
- [AL] Auricchio, F. and Lovadina, C., Analysis of kinematic linked interpolation methods for Reissner-Mindlin plate problems. *Comput. Methods Appl. Mech. Engrg.*, **190**, 2465–2482, 2001.
- [AMR] Alfano, G., Marotti de Sciarra, F. and Rosati, L., Automatic analysis of multicell thin-walled sections. *Computers and Structures*, **59**(4), 641–655, 1996.
- [APAK] Argyris, J.H., Papadrakakis, M., Apostolopoulou, C. and Koutsourelakis, S., The TRIC shell element: theoretical and numerical investigation. *Comput. Methods Appl. Mech. Engrg.*, **182**, 217–245, 2000.
- [Ar] Argyris, J.H., Matrix displacement analysis of anisotropic shells by triangular elements. *J. Roy. Aero. Soc.*, **69**, 801–5, 1965.
- [Ar2] Argyris, J.H., Continua and discontinua. In *Proc. 1st Conf. Matrix Methods in Structural Mechanics*. Volume AFFDL-TR-66-80, pp. 11–189, Wright Patterson Air Force Base, Ohio, October 1966.
- [AR] Alwar, R.S. and Ramachandran, K.N., Theoretical and photoelastic analysis of thick slabs subjected to highly localised loads. *Building Science*, **7**, 159–66, 1972.
- [As] Ashwell, D.G., Strain elements with applications to arches, rings and cylindrical shells, en *Finite elements for thin shells and curved members*. D.G. Ashwell and R.H. Gallagher (eds.), John Wiley, 91–111, 1976.
- [AS] Abramowitz, M. and Stegun, I.A. (eds.), *Handbook of Mathematical Functions*. Dover Publications, New York, 1965.
- [ASR] Ashwell, D.G., Sabir, A.B. and Roberts, T.M., Further studies in the application of curved finite elements to circular arches. *Int. J. Mech. Science*, **13**, 6, 507–17, 1971.

- [AT] Auricchio, F. and Taylor, R.L., A shear deformable plate element with an exact thin limit. *Comput. Methods Appl. Mech. Engrg.*, **118**, 393–412, 1994.
- [AT2] Auricchio, F. and Taylor, R.L., A triangular thick plate finite element with an exact thin limit. *Finite Elements in Analysis and Design*, **19**, 57–68, 1995.
- [ATO] Argyris, J.H., Tenek, L. and Olofsson, L., TRIC: a simple but sophisticated 3-node triangular element based on six rigid-body and 12 straining modes for fast computational simulations of arbitrary isotropic and laminated composite shells. *Comput. Methods Appl. Mech. Engrg.*, **145**, 11–85, 1997.
- [ATPA] Argyris, J.H., Tenek, L., Papadrakakis, M., Apostolopoulou, C., Post-buckling performance of the TRIC natural mode triangular element for isotropic and laminated composite shells. *Comput. Methods Appl. Mech. Engrg.*, **166**, 211–231, 1998.
- [AU] Alam, N.M. and Upadhyay, N.Kr., Finite element analysis of laminated composite beams for zigzag theory using MATLAB. *Int. J. of Mechanics and Solids*, **5**(1), 1–14, 2010.
- [Av] Averill, R.C., Static and dynamic response of moderately thick laminated beams with damage. *Composites Engineering*, **4**(4), 381–395, 1994.
- [AY] Averill, R.C. and Yuen Cheong Yip, Development of simple, robust finite elements based on refined theories for thick laminated beams. *Computers and Structures*, **59**(3), 529–546, 1996.
- [BA] Build Air Engineering and Architecture SA (www.buildair.com).
- [Bab] Babuška, I., The stability of domains and the question of formulation of plate problems. *Appl. Math.*, 463–467, 1962.
- [Ban] Bank, L., Shear coefficients for thin-walled composite beams. *Composite Structures*, **8**, 47–61, 1987.
- [Bar] Barnes, M.R., Form finding and analysis of tension space structure by dynamic relaxation. *PhD Thesis*, Department of Civil Engineering, The City University, London, 1977.
- [Bar2] Barbero, E.J., *Finite element analysis of composite materials*, CRC Press, 2008.
- [Bat] Batoz, J.L., An explicit formulation for an efficient triangular plate bending element, *Int. J. Numer. Meth. Engng.*, **18**, 1077–89, 1982.
- [Bat2] Bathe, K.J., *Finite element procedures*. Prentice Hall, Inc., 1996.
- [BB] Bank, L.C. and Bednarczyk, P.J., A beam theory for thin-walled composite beams. *Composites Science and Technology*, **32**(4), 265–277, 1988.
- [BBH] Batoz, J.L., Bathe, K.J. and Ho, L.W., A study of three node triangular plate bending elements. *Int. J. Numer. Meth. Engng.*, **15**, 1771–812, 1980.

- [BBHH] Benson, D.J., Bazilevs, Y., Hsu, M.C. and Hughes, T.J.R., Isogeometric shell analysis: The Reissner-Mindlin shell. *Comput. Methods Appl. Mech. Engrg.*, **199**, 276–289, 2010.
- [BBR] Braun, M., Bischoff, M. and Ramm, E., Nonlinear shell formulations for complete three-dimensional constitutive laws including composites and laminates. *Comput. Mech.*, **15**, 1–18, 1994.
- [BBt] Batoz, J.L. and Ben Tahar, M., Evaluation of a new quadrilateral thin plate bending element, *Int. J. Numer. Meth. Engrg.*, **18**, 1655–77, 1982.
- [BC] Bauchau, O.A. and Craig, J.I., *Structural Analysis with Applications to Aerospace Structures*. Springer, 2009.
- [BCC+] Bazilevs, Y., Calo, V.M., Cottrell, J.A., Evans, J.A., Hughes, T.J.R., Lipton, S., Scott, M.A. and Sederberg, T.W., Isogeometric analysis using T-splines. *Comput. Methods Appl. Mech. Engrg.*, **199**, 229–263, 2010.
- [BCIZ] Bazeley, G.P., Cheung, Y.K., Irons, B.M. and Zienkiewicz, O.C., Triangular elements bending-conforming and non conforming solution. *Proc. Conf. Matrix Meth. in Struct. Mech.*, Air Force Inst. of Tech., Wright Patterson A.F. Base, Ohio, 1965.
- [BD] Bathe, K.J. and Dvorkin, E.N., A four node plate bending element based on Mindlin-Reissner plate theory and mixed interpolation. *Int. J. Numer. Meth. Engrg.*, **21**, 367–383, 1985.
- [BD2] Bathe, K.J. and Dvorkin, E.N., A formulation of general shell elements. The use of mixed interpolation of tensorial components. *Int. J. Numer. Meth. Engrg.* **22**, 697–722, 1986.
- [BD3] Batoz, J.L. and Dhatt, G., A state of the art on the discrete Kirchhoff plate bending elements. In *Calcul des Structures et Intelligence Artificielle*, J.M. Fonet, P. Ladeveze and R. Ohayon (Eds.), Ed. Pluralis, 1988.
- [BD4] Batoz, J.L. and Dhatt, G., *Modelisation des structures par éléments finis*. Vol. **1**: *Solides elastiques*, Hermes, Paris, 1990.
- [BD5] Batoz, J.L. and Dhatt, G., *Modelisation des structures par éléments finis*. Vol. **2**: *Poutres et plaques*, Hermes, Paris, 1990.
- [BD6] Batoz, J.L. and Dhatt, G., *Modelisation des structures par éléments finis*. Vol. **3**: *Coques*, , Hermes, Paris, 1990.
- [BD7] Bucciarelli, L.L. and Dworsky, N., *Sophie Germain: an Essay in the History of the Theory of Elasticity*. Reidel, New York, 1980.
- [Be] Bell, K., A refined triangular plate bending finite element. *Int. J. Numer. Meth. Engrg.*, **1**, 101–22. 1969.
- [Be2] Bert, C.W., Simplified analysis of static shear factors for beams of non homogeneous cross sections. *J. Comp. Mat.*, **7**, 525–529, 1973.
- [Be3] Beyer, W.H., *CRC Standard Mathematical Tables*. CRC Press, 28th ed., 1988.

- [Bel] Belytschko, T., A review of recent developments in plate and shell elements. In *Computational Mechanics - Advances and Trends*, AMD, Vol. **75**, ASME, New York, 1986.
- [BF] Bergan, P.G. and Felippa, C.A., A triangular membrane element with rotational degrees of freedom. *Comput. Methods Appl. Mech. Engrg.*, **50**, 25–69, 1985 .
- [BF2] Bergan, P.G. and Felippa, C.A., Efficient implementation of a triangular membrane element with drilling freedoms. In *Finite Element Methods for Plate and Shell Structures*, T.J.R. Hughes and E. Hinton (eds.), **1**, 128–152, Pineridge Press, Swansea, 1986.
- [BFS] Bogner, F.K., Fox, R.L. and Schmit, L.A., The generation of interelement compatible stiffness and mass matrices by the use of interpolation formulae. *Proc. Conf. Matrix Methods in Struct. Mech.*, Air Force Inst. of Tech., Wright Patterson A. F. Base, Ohio, 1965.
- [BFS2] Bogner, F.K., Fox, R.L. and Schmit, L.A., A cylindrical shell discrete element, *AIAA Journal*, **5**, 4, 745–50, 1967.
- [BFS3] Brezzi, F., Fortin, M. and Stenberg, R., Error analysis of mixed interpolated elements for Reissner-Mindlin plates, *Mathematical Models and Methods in Appl. Sciences*, **1**, 2 125–51, 1991.
- [BG] Bert, C.W. and Gordaninejad, F., Transverse shear effects in bimodular composite laminates. *J. Comp. Mat.*, **17**, 282–298, 1983.
- [BH] Benson, P.R. and Hinton, E., A thick finite strip solution for static free vibration and stability problems. *Int. J. Numer. Meth. Engrg.*, **10**, 665–678, 1976.
- [BH2] Bergan, P.G. and Hanssen, L., A new approach for deriving ‘good’ element stiffness matrices. In J.R. Whiteman (ed.), *The Mathematics of Finite Elements and Applications*, pages 483–497, Academic Press, London, 1977.
- [BK] Batoz, J.L. and Katili, I., On a simple triangular Reissner-Mindlin plate element based on incompatible modes and discrete constraints. *Int. J. Numer. Meth. Engrg.*, **35**, 1603–1632, 1992.
- [Bl] Blanco, E., *Estudio numérico y experimental de la influencia de distintos parámetros en la respuesta de tableros oblicuos de puentes de sección transversal losa*. Ph.D. Thesis, E.T.S. de Ingenieros de Caminos, Univ. Politècnica de Catalunya, 1988.
- [BL] Batoz, J.L. and Lardeur, P.A., A discrete shear triangular nine DOF element for the analysis of thick to very thin plates. *Int. J. Numer. Meth. Engrg.*, **28**, 5, 1989.
- [BLD] Barbero, E.J., Lopez-Anido, R. and Davalos, J.F., On the mechanics of thin-walled laminated composite beams. *Journal of Composite Materials*, **27**(8), 806–829, 1993.

- [BLOL] Belytschko, T., Liu, W.K., Ong, J.S.J. and Lam, D., Implementation and application of a 9-node Lagrange shell element with spurious mode control. *Computers and Structures*, **20**(1), 121–128, 1985.
- [BN] Bergan, P.G. and Nygard, M.K., Finite elements with increased freedom in choosing shape functions. *Int. J. Numer. Meth. Engng.*, **20**, 643–663, 1984.
- [Bo] Bouabdallah, S., Détermination des facteurs de correction de cisaillement et des rigidités de torsion des poutres composites par éléments finis. Rapport interne, Division MNM, Université de Technologie de Compiègne (UTC), 1990.
- [BOM] Botello, S. Oñate, E. and Miquel, J., A layer-wise triangle for analysis of laminated composite plates and shells. *Computers and Structures*, **70**, 635–646, 1999.
- [BR] Buechter, N. and Ramm, E., *Comparison of shell theory and degeneration*. In Nonlinear Analysis of Shells using Finite Elements, CISM, Udine, Italy, June 1991.
- [BR2] Buechter, N. and Ramm, E., 3D-extension of nonlinear shell equations based on the enhanced assumed strain concept. In *Computational Methods in Applied Sciences*, C. Hirsch (Ed.), Elsevier, pp. 39–59, 1992.
- [BR3] Bischoff, M. and Ramm, E., Shear deformable shell elements for large strains and rotations. *Int. J. Numer. Meth. Engng.*, **40**, 4427–4449, 1997.
- [BRR] Buechter, N., Ramm, E. and Roehl, D., Three-dimensional extension of nonlinear shell formulation based on the enhanced assumed strain concept. *Int. J. Numer. Meth. Engng.*, **37**, 2551–2568, 1994.
- [BRI] Baldwin, J.T., Razzaque, A. and Irons, B.M., Shape functions subroutine for an isoparametric thin plate element. *Int. J. Numer. Meth. Engng.*, **7**, 431–440, 1973.
- [BS] Babuška, I. and Scapolla, T., Benchmark computation and performance evaluation for a rhombic plate bending problem. *Int. J. Numer. Meth. Engng.*, **28**, 155–180, 1989.
- [BS2] Budiansky, B. and Sanders, J.L. Jr., On the best first order linear shell theory. *Progress in Applied Mech.*, MacMillan, New York, 1963.
- [BS3] Booker, J.R. and Small, J.C., Finite layer analysis of consolidation. Part I. *Int. J. for Num. and Anal. Meth. in Geomechanics*, **6**(2), 173–194, 1982.
- [BS4] Booker, J.R. and Small, J.C., Finite layer analysis of viscoelastic layered materials. *Int. J. for Num. and Anal. Meth. in Geomechanics*, **10**, 415–430, 1986.
- [BS5] Brunet, M. and Sabourin, F., A simplified triangular shell element with a necking criterion for 3-D sheet-forming analysis. *J. Mater. Process. Technol.*, **50**, 238–251, 1995.
- [BS6] Brunet, M. and Sabourin, F., Analysis of a rotation-free shell element. *Int. J. Numer. Methods Engng.*, **66**, 1483–1510, 2006.

- [BSC] Belytschko, T., Stolarski, H. and Carpenter, N., A C_0 Triangular plate element with one point quadrature. *Int. J. Numer. Meth. Engng.*, **20**, 787–802, 1984.
- [BSL+] Belytschko, T., Stolarski, H., Liu, W.K., Carpenter, N. and Ong, J.S.J., Stress projection for membrane and shear locking in shell finite elements. *Comput. Methods Appl. Mech. Engng.*, **51**(1), 221–258, 1985.
- [BT] Belytschko, T. and Tsay, C.S., A stabilization procedure for the quadrilateral plate element with one point quadrature. *Int. J. Numer. Meth. Engng.*, **19**, 405–19, 1983.
- [BT2] Bauld, N.R. and Tzeng, L.-S., A Vlasov theory for fiber-reinforced beams with thin-walled open cross sections. *International Journal of Solids and Structures*, **20**(3), 277–297, 1984.
- [BTL] Belytschko, T., Tsay, C.S. and Liu, W.K., A stabilization matrix for the bi-linear Mindlin plate element. *Comput. Methods Appl. Mech. Engng.*, **29**, 313–327, 1981.
- [BW] Bergan, P.G. and Wang, X., Quadrilateral plate bending elements with shear deformations. *Comput. Methods Appl. Mech. Engng.* **19** (1–2), 25–34, 1984.
- [BW2] Back, S.Y. and Will, K.M., Shear-flexible thin-walled element for composite i-beams. *Engineering Structures*, **30**(5), 1447–1458, 2008.
- [BWBR] Bischoff, M., Wall, W.A., Bletzinger, K.-U. and Ramm, E., Models and finite elements for thin-walled structures. In E. Stein, R. de Borst, T.J.R. Hughes (Eds.), *Encyclopedia of Computational Mechanics, Solids Structures and Coupled Problems*, vol. 2, Wiley, (Chapter 3), 2004.
- [BWS] Belytschko, T., Wong, B.L. and Stolarski, H., Assumed strain stabilization procedure for the 9-node Lagrange shell element. *Int. J. Numer. Meth. Engng.*, **28**(2), 385–414 1989.
- [Ca] Carrera, E., Historical review of zigzag theories for multilayered plate and shell. *Applied Mechanics Review*, **56**(3), 287–308, 2003.
- [Cal] Calladine, C.R., *The theory of shell structures*. Cambridge University Press, 1983.
- [Cas] Casadei, F., *A bibliographic study of finite elements for the elasto-plastic analysis of 3D shell like structures subjected to static and dynamic loading*. Technical Report No. 1.06.C1.86.79, Commission of the European Communities, Joint Research Center, Ispra, Italy, 1986.
- [CB] Connor, J. and Brebbia, C., A stiffness matrix for a shallow rectangular shell element. *Journal of Engng. Mech. Div.*, ASCE, **93**, 43–65, 1967.
- [CBS] Carpenter, N., Belytschko, T. and Stolarski, H., Locking and shear scaling factors in C_0 bending elements. *Comput. and Struct.*, **22**, 39–52, 1986.

- [CC] Cantin, G. and Clough, R.W., A curved cylindrical shell finite element. *AIAA Journal*, **6**, 1057–62, 1968.
- [CD] Coull, A. and Das, Y.P.C., Analysis of curved bridge decks. *Proc. Institution Civil Engineers*, **37**, 75–85, 1987.
- [CF] Clough, R.W. and Felippa, C.A., A refined quadrilateral element for analysis of plate bending. *Proc. 2d Conf. Mat. Meth. Struct. Mech.*, AFIT, Wright-Patterson, Air Force Base, Ohio, 399–440, 1968.
- [CHB] Cottrell, J.A., Hughes, T.J.R. and Bazilevs, Y., *Isogeometric Analysis Towards Integration of CAD and FEA*. J. Wiley, 2009.
- [CKLO] Cowper, G.R., Kosko, E., Lindberg, G.M. and Olson, D.M., A high precision triangular plate bending element. *Report LR-514, National Aeronautical Establishment*, National Research Council of Canada, Ottawa, 1968.
- [CKZ] Cheung, Y.K., King, I.P. and Zienkiewicz, O.C., Slab bridges with arbitrary shape and support condition - A general method of analysis based on finite elements. *Proc. Inst. Civil Engrg.*, **40**, 9–36, 1968.
- [CLO] Cowper, G.R., Lindberg, G.M. and Olson, M.D., A shallow finite element of triangular shape. *Int. J. Solids and Struct.*, **6**, 8, 1133–56, 1970.
- [CMPW] Cook, R.D., Malkus, D.S., Plesha, M.E. and Witt, R.J., *Concepts and applications of finite element analysis*. 4th edition, Wiley, 2002.
- [Co] Cox, M.G., The numerical evaluation of B-splines. Technical report. National Physics Laboratory, DNAC 4, 1971.
- [Co1] Cohen, G.A., Transverse shear stiffness of laminated anisotropic shells. *Comput Meth. Appl. Mech. Engrg.*, **13**, 205–220, 1978.
- [Co2] Courtney, T.H., *Mechanical behaviour of materials*. McGraw-Hill, 1990.
- [Co3] Cook, R.D., On the Allman triangle and a related quadrilateral element. *Computers and Structures*, **2**, 1065–1067, 1986.
- [Co4] Cook, R.D., A plane hybrid element with rotational d.o.f. and adjustable stiffness. *Int. J. Numer. Meth. Engrg.*, **24**, 1499–1508, 1987.
- [Co5] Cook, R.D., Modified formulations for nine-DOF plane triangles that include vertex rotations. *Int. J. Numer. Meth. Engrg.*, **31**, 825–835, 1991.
- [Co6] Cowper, G.R., The shear coefficient in Timoshenko's beam theory. *J.A.M.*, 335–340, June 1966.
- [CP] Crisfield, M.A., and Puthli, R.S., Approximations in the non linear analysis of thin plate structures. In *Finite elements in non linear mechanics*, P. Bergan *et al.* (Eds.), **1**, Tapir, Trondheim, Noruega, 373–92, 1978.
- [Cr] Crisfield, M.A., *Finite element and solution procedures for structural analysis, I: Linear analysis*. Pineridge Press, 1986.

- [Cr2] Crisfield, M.A., A four-noded thin-plate bending element using shear constraints. A modified version of Lyon's element. *Comput. Methods Appl. Mech. Engrg.*, **38**, 93–120, 1983.
- [Cr3] Crisfield, M.A., A quadratic Mindlin element using shear constraints. *Computers and Structures*, **18**, 833–52, 1984.
- [Cr4] Crisfield, M.A., Explicit integration and the isoparametric arch and shell elements. *Communications in Applied Numerical Methods*, **2**(2), 181–187, 1986.
- [ChR] Chao, W.C. and Reddy, J.N., Analysis of laminated composite shells using a degenerated 3D element. *Int. J. Numer. Meth. Engrg.*, **20**(11), 1991–2007, 1984.
- [CRE] Cohen, E., Riesenfeld, R.F. and Elber, G., *Geometric Modeling with Splines: An Introduction*. A.K. Peters, Natick, MA, pp. 638, 2001.
- [CSB] Carpenter, N., Stolarski, H. and Belytschko, T., A flat triangular shell element with improved membrane interpolation. *Communications in Applied Numerical Methods*, **1**, 161–168, 1985.
- [CSB2] Carpenter, N., Stolarski, H. and Belytschko, T., Improvements in 3 node triangular shell elements. *Int. J. Numer. Meth. Engrg.*, **23**, 1643–67, 1986.
- [CT] Clough, R.W. and Tocher, J.L., Finite element stiffness matrices for analysis of plates in bending. *Proc. Conf. Matrix Meth. in Struct. Mech*, AFIT, Wright-Patterson, Air Force Base, Ohio, 515–45. 1965.
- [CW] Clough, R.W. and Wilson, E.L., Dynamic finite element analysis of arbitrary thin shells. *Computers and Structures*, **1**, 33–56, 1971.
- [Ch] Cheung, Y.K., Finite strip analysis of elastic slabs. *Proc. Am. Soc. Civil Eng.*, **94**, 1365–78, 1968.
- [Ch2] Cheung, Y.K., The finite strip method in the analysis of elastic plates with two opposite simple supported ends. *Proc. Inst. Civil Engng*, **40**, 1–7, 1968.
- [Ch3] Cheung, Y.K., Analysis of box girder bridges by the finite strip method. *Am. Conc. Inst. Public.*, SP 26, 357–78, 1969.
- [Ch4] Cheung, Y.K., Folded plate structures by the finite strip method. *Am. Soc. Civil Eng.*, **96**, 2963–79, 1969.
- [Ch5] Cheung, Y.K., The analysis of cylindrical orthotropic curved bridge decks. *Pub. Int. Ass. Struct. Engng.*, **29**, 41–52, 1969.
- [Ch6] Cheung, Y.K., *The finite strip method in structural analysis*. Pergamon Press, 1976.
- [ChC] Cheung, Y.K. and Chakrabati, S., Analysis of simply supported thick layered plates. *J. of Engineering Mechanics, ASCE*, **97**(3), 1039–1044, 1971.

- [ChC2] Cheung, Y.K. and Chakrabati, S., Free vibration of thick layered rectangular plates by finite layer method. *J. of Sound and Vibration*, **21**(3), 277–284, 1972.
- [ChC3] Cheung, M.S. and Cheung, Y.K., Analysis of curved bridges by the finite strip method. Research Report. Dept. of Civil Engineering, Univ. of Calgary, Canada, 1970.
- [ChC4] Cheng, W.J. and Cheung, Y.K., Refined 9-dof triangular Mindlin plate elements. *Int. J. Numer. Meth. Engng.*, **51**, 1259–1281, 2001.
- [ChC5] Cheng, W.J. and Cheung, Y.K., Refined quadrilateral element based on Mindlin-Reissner plate theory. *Int. J. Numer. Meth. Engng.*, **47**, 605–627, 2000.
- [ChF] Chan, A.S.L. and Firmin, A., The analysis of cooling towers by the matrix finite element method. *Aeronaut. J.*, **74**, 826–35, 1970.
- [ChF2] Cheung, Y.K. and Fan, S.C., Analysis of pavement and layered foundations by finite layer method. *Proc. of Third Int. Conf. on Num. Method in Geomechanics*, Aachen, Germany, 2–6 April 1979, 1129–1135, 1975.
- [ChLC] Chinesta, F., Ladeveze, P. and Cueto, E., A short review on model order reduction based on Proper Generalized Decomposition. *Archives for Numerical Methods in Engineering*, **18**(4), 395–404, 2011.
- [ChP] Cho, M. and Parmerter, R.R., Efficient higher order composite plate theory for general laminations configuration. *AIAA J.*, **31**, 1299–1306, 1993.
- [ChT] Cheung, Y.K. and Tham, L.G., *The finite strip method*. CRC Press, 1998.
- [ChTC] Chong, K.P., Tham, L.G. and Cheung, Y.G., Thermal behavior of formed sandwich plate by finite-prism-strip method. *Computers and Structures*, **15**(3), 321–324, 1982.
- [Da] Dawe, D.J., Shell analysis using a simple facet element. *J. Strain Analysis*, **7**, 266–70, 1972.
- [Da2] Dawe, D.J., Some higher order elements for arches and shells. In *Finite elements for thin shells and curved members*, D.G. Ashwell and R.H. Gallagher (Eds.), J. Wiley, 131–53, 1976.
- [Da3] Dawe, D.J., Curved finite elements for the analysis of shallow and deep arches. *Computers and Structures*, **4**, 559–82, 1979.
- [DB] Dvorkin, E.N. and Bathe, K.J., A continuum mechanics based four node shell element for general non-linear analysis. *Engineering Computations*, **1**, 77–88, 1984.
- [DeB] De Boor, C., On calculation with *B*-splines. *Journal of Approximation Theory*, **6**, 50–62, 1972.

- [Del] Delpak, R., *Role of the curved parametric element in linear analysis of thin rotational shells*, Ph.D Thesis, Dept. Civil Engineering and Building, The Polytechnic of Wales, 1975.
- [Dem] Demmel, J., *Applied Numerical Linear Algebra*. Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA, 1997.
- [DG] Dupuis, G. and Goël, J.J., A curved finite element for thin elastic shells. *Int. J. Solids and Struct.*, **6**, 11, 1413–28, 1970.
- [DG2] Di Sciuva, M. and Gherlone, M. A global/local third-order Hermitian displacement field with damaged interfaces and transverse extensibility: FEM formulation. *Composite Structures*, **59**(4), 433–444, 2003.
- [DG3] Di Sciuva, M. and Gherlone, M., Quasi-3D static and dynamic analysis of undamaged and damaged sandwich beams. *Journal of Sandwich Structures & Materials*, **7**(1), 31–52, 2005.
- [Dh] Dhatt, G., Numerical analysis of thin shells by curved triangular elements based on a discrete Kirchhoff hypothesis. *Proc. ASCE Symp. on Applications of FEM in Civil Engng.*, Vanderbilt Univ., Nashville, Tenn., 13–14, 1969.
- [Dh2] Dhatt, G., An efficient triangular shell element. *AIAA J.*, **8**, 2100–2, 1970.
- [Di] Dill, E.H., A triangular finite element for thick plates. *Computational Mechanics III*, S.N. Atluri *et al.* (Eds.), Springer Verlag, 1988.
- [DiS] Di Sciuva, M., A refined transverse shear deformation theory for multilayered anisotropic plates. *Atti Accademia delle Scienze di Torino*, **118**, 279–295, 1984.
- [DiS2] Di Sciuva, M., Development of an anisotropic, multilayered shear deformable plate element. *Computers & Structures*, **21**(4), 789–796, 1985.
- [DiS3] Di Sciuva, M., Multilayered anisotropic plate model with continuous interlaminar stresses. *Composite Structures*, **22**(3), 149–168, 1992.
- [DJS] Dörfel, M.R., Jüttler, B. and Simeon, B., Adaptive isogeometric analysis by local h -refinement with T-splines. *Comput. Methods Appl. Mech. Engrg.*, **199**(5–8), 264–275, 2010.
- [DL] Donea, J. and Lamain, L.G., A modified representation of transverse shear in C_0 quadrilateral plate elements. *Comput. Methods Appl. Mech. Engrg.*, **63**, 183–207, 1987.
- [DM] Dharmarajan, S. and Mac Cutchen, H., Shear coefficients for orthotropic beams. *J. Composite Materials*, **7**, 530–535, 1973.
- [DMM] Dhatt, G., Marcotte, L. and Matte, Y., A new triangular discrete Kirchhoff plate shell element. *Int. J. Numer. Meth. Engrg.*, **23**, 453–470, 1986.
- [DMMT] Dhatt, G., Marcotte, L., Matte, Y. and Talbot, M., Two new discrete Kirchhoff plate shell elements. 4th Symp. on Num. Meth. in Engrg., Atlanta, Georgia, 599–604, 1986.

- [DV] Dhatt, G. and Venkatasubby, S., Finite element analysis of containment vessels. *Proc. First Conf. on Struct. Mech. in Reactor Tech.*, **5**, Paper J3/6, Berlin, 1971.
- [DZ] Drysdale, W.H. and Zak, A.R., Structural problems in thick shells. In *Thin Shell Structures*, Y.C. Fung and E.E. Schler (Eds.), pp. 453-464, Prentice Hall, Englewood Cliffs, New Jersey, 1974.
- [EKE] Ertas, A., Krafcik, J.T., Ekwaro-Osire, S., Explicit formulation of an anisotropic Allman/DKT 3-node thin triangular flat shell elements. *Composite Material Technology*, ASME, PD-Vol.37, 249-255, 1991.
- [EOO] Eijo, A., Oñate, E. and Oller, S., A four-noded composite laminated Reissner-Mindlin plate element based on the refined zigzag theory. Research Report No. 382, CIMNE, Barcelona, 2012.
- [Fa] Fan, S.C., *Spline finite strip method in structural analysis*. Ph.D. Thesis, Dept. of Civil Engineering, University of Hong Kong, 1982.
- [FB] Foye, R.L. and Baker, D.J., Design of orthotropic laminates. *Proc. 11th Annual AIAA Structures, Structural Dynamics, and Materials Conference*, Denver, Colorado, April 1970.
- [FB2] Felippa, C.A. and Bergan, P.G., A triangular plate bending element based on energy orthogonal free formulation. *Comput. Methods Appl. Mech. Engrg.*, **61**, 129-60, 1981.
- [FdV] Fraeijis de Veubeke, B., Displacement and equilibrium models in finite element method. In O.C. Zienkiewicz and G.S. Holister (Eds.), *Stress Analysis*, Chapter 9, pages 145-197, John Wiley & Sons, Chichester, 1965.
- [FdV2] Fraeijis de Veubeke, B., A conforming finite element for plate bending. *Int. J. Solids and Struct.*, **4**, 95-108, 1968.
- [FE] Flores, F.G. and Estrada, C.F., A rotation-free thin shell quadrilateral. *Comput. Methods Appl. Mech. Engrg.*, **196**, 2631-2646, 2007.
- [Fel] Felippa, C., The amusing history of shear flexible beam elements. *IACM Expressions*, **17**, 15-19, 2005. Available from www.iacm.info.
- [Fl] Flügge, N., *Stresses in shells*. Springer-Verlag, 1962.
- [FM] Felippa, C.A. and Mitello, C., Developments in variational methods for high performance plate and shell elements. In *Analytical and Computational Models of Shells*, Noor *et al.* (Eds.), CED, **3**, ASME, 191-215, 1989.
- [FM2] Feo, L. and Mancusi, G., Modeling shear deformability of thin-walled composite beams with open cross-section. *Mechanics Research Communications*, **37**(3), 320-325, 2010.
- [FO] Flores, F. and Oñate, E., A comparison of different finite elements based on Simo's shell theory. Research Report No. 33, CIMNE, Barcelona, 1993.

- [FO2] Flores, F. and Oñate, E., A basic thin shell triangle with only translational DOFs for large strain plasticity. *Int. J. Numer. Meth. Engng.*, **51**, 57–83, 2001.
- [FO3] Flores, F. and Oñate, E., Improvements in the membrane behaviour of the three node rotation-free BST shell triangle using an assumed strain approach. *Comput. Methods Appl. Mech. Engng.*, **194**, 907–932, 2005.
- [FO4] Flores, F. and Oñate, E., A rotation-free shell triangle for the analysis of kinked and branching shells. *Int. J. Numer. Meth. Engng.*, **69**, 1521–1551, 2007.
- [FO5] Flores, F. and Oñate, E., Wrinkling and folding analysis of elastic membranes using an enhanced rotation-free thin shell triangular element. *Finite Elements in Analysis and Design*, **47**, 982–990, 2011.
- [FOO] Flores, R., Ortega, E. and Oñate, E., Simple and efficient numerical tools for the analysis of parachutes. Publication PI387, CIMNE, October 2012.
- [Fr] Fried, I., Shear in C_0 and C_1 plate bending elements. *Int. J. Solids and Struct.*, **9**, 449–60, 1973.
- [Fr2] Fried, I., Residual balancing technique in the generation of plate bending finite element. *Comput. and Struct.*, **4**, 771–78, 1974.
- [Fra] Franson, B., A generalized finite strip method for plate and wall structures. Publication 77:1, Dept. of Structural Mechanics, Chalmers University of Technology, 1977.
- [Fri] Friedrich, R., Finite strips: 30 years. A bibliography (1968–1998). *Engng. Computations*, **17**(1), 92–111, 2000.
- [FT] Fam, A. and Turkstra, C., A finite element method for box bridge analysis. *Computers and Structures*, **5**, 179–186, 1975.
- [FV] Fezans, G. and Verchery, G., Some results on the behaviour of degenerated shell (DS) elements. *Nuclear Engineering and Design*, **70**, 27–35, 1982.
- [FY] Fried, I. and Yang, S.K., Triangular nine degrees of freedom C_0 plate bending element of quadratic accuracy. *Quart. Appl. Math.*, **31**, 303–312, 1973.
- [Ga] Gallagher, R.H., Shell elements. *World Conf. on Finite Element Methods in Structural Mech.*, E1–E35, Bournemouth, Dorset, Inglaterra, Oct., 1975.
- [Ga2] Gallagher, R.H., *Finite Element Analysis Fundamentals*. Prentice–Hall, Englewood Cliffs, N.J., 1975.
- [Ga3] Gay, D., *Matériaux composites*. Hermès, Paris, 1987.
- [Ga4] Galerkin, B.G., Series solution of some problems in elastic equilibrium of rods and plates. *Vestn. Inzh. Tech.*, **19**, 897–908, 1915.
- [GB] Guo, Y.Q., Batoz, J.L., Résultants du cas test sur la poutre console. Bulletin du Club ϕ^2 AS, IPSI, **13**, 3A, 1989.

- [GiD] GiD. The personal pre-postprocessor. www.gidhome.com, CIMNE, Barcelona, 2012.
- [GL] Greimann, L.F. and Lynn, P.P., Finite element analysis of plate bending with transverse shear deformation. *Nuclear Engineering and Design*, **14**, 223–230, 1970.
- [GM] Giannini, M. and Miles, G.A., A curved element approximation in the analysis of axisymmetric thin shells. *Int. J. Numer. Meth. Engng.*, **2**, 459–70, 1970.
- [Go] Gould, P.L., *Finite Element Analysis of Shells of Revolutions*. Pittman Pub. Co., Marsfield, MA, 1985.
- [Go2] Gould, P.L., *Analysis of shells and plates*. Springer Verlag, 1988.
- [GO] García, J and Oñate, E., An unstructured finite element solver for ship hydrodynamics problems. *J. Appl. Mech.*, **70**, 18–26, 2003.
- [GP] Gunnlaugsson, G.A. and Pedersen, P.T., A finite element formulation for beams with thin-walled cross-section. *Computers and Structures*, **15** (6), 691–699, 1982.
- [GS] Grafton, P.E. and Strome, D.R., Analysis of axi-symmetric shells by the direct stiffness method. *A.I.A.A.J.*, **1**, 2342–7, 1963.
- [GSW] Greene, B.E., Strome, D.R. and Weikel, R.C., Application of the stiffness method to the analysis of shell structures. In *Proc. Aviation Conf. of American Society of Mechanical Engineers, ASME*, Los Angeles, March 1961.
- [GTD] Gherlone, M., Tessler, A. and Di Sciuva, M., C° beam element based on the refined zigzag theory for multilayered composite and sandwich laminates. *Composite Structures*, **93**(11), 2882–2894, 2011.
- [Gu] Guo, Y.Q., *Analyse non linéaire statique et dynamique des poutres tridimensionnelles élasto-plastiques*. Thèse de Doctorat, UTC, 1987.
- [HB] Horrigmoe, G. and Bergan, P.G., Non linear analysis of free form shells by flat finite elements. *Comput. Methods Appl. Mech. Engrg.*, **16**, 11–35, 1979.
- [HB2] Hughes, T.J.R. and Brezzi, F., On drilling degrees-of-freedom. *Comput. Methods Appl. Mech. Engrg.*, **72**, 105–121, 1989.
- [HC] Hughes, T.J.R. and Cohen, M., The Heterosis finite element for plate bending. *Computers and Structures*, **9**, 445–50, 1978.
- [HCB] Hughes, T.J.R., Cottrell, J.A. and Bazilevs, Y., Isogeometric analysis: CAD finite elements NURBS exact geometry and mesh refinement. *Comput. Methods Appl. Mech. Engrg.*, **194**, 4135–4195, 2005.
- [He] Hellen, T.K., An assessment of the semi-loof shell element. *Int. J. Numer. Meth. Engng.*, **22**, 133–151, 1986.

- [HH2] Hinton, E. and Huang, H.C., A family of quadrilateral Mindlin plate element with substitute shear strain fields. *Comp. and Struct.*, **23**, 409–431, 1986.
- [HH3] Huang, H.C. and Hinton, E., A nine node Lagrangian Mindlin plate element with enhanced shear interpolation. *Engng. Comput.*, **1**, 369–79, 1984.
- [HH4] Huang, H.C. and Hinton, E., Lagrangean and Serendipity plate and shell elements through thick and thin. In *Finite element methods for plate and shell structures*, T.J.R. Hughes and E. Hinton (Eds.), Pineridge Press, 1986.
- [HH5] Huang, H.C. and Hinton, E., A new nine node degenerated shell element with enhanced membrane and shear interpolation. *Int. J. Numer. Meth. Engng.*, **22**, 73–92, 1986.
- [HK] Harvey, J.W. and Kelsey, S., Triangular plate elements with enforced continuity. *A.I.A.A.J.*, **9**, 1026–6, 1971.
- [HL] Hughes, T.J.R. and Liu, W.K., Non linear finite element analysis of shells. Part I. Three dimensional shells. *Comput. Methods Appl. Mech. Engrg.*, **26**, 331–362, 1981.
- [HL2] Haas, D.J. and Lee, S.W., A nine node assumed strain finite element for composite plates and shells. *Computers and Structures*, **26**, 445–452, 1987.
- [HMH] Hughes, T.J.R., Masud, A. and Harari, I., Numerical assessment of some membrane elements with drilling degrees of freedom. *Computers and Structures*, **55**(2), 297–314, 1995.
- [HO] Hinton, E. and Owen, D.R.J., *Finite element software for plates and shells*. Pineridge Press, 1988.
- [HRS] Hughes, T.J.R., Reali, A. and Sangalli, G., Efficient quadrature for NURBS-based isogeometric analysis. *Comput. Methods Appl. Mech. Engrg.*, **199**, 301–313, 2010.
- [HT] Hughes, T.J.R. and Taylor, R.L., The linear triangular plate bending element. *Proc. of 4th MAFELAP Conf.*, Brunel Univ., Uxbridge, 1981, (Edited by J.R. Whiteman), 127–42, Academic Press, 1982.
- [HTC] Hampshire, J.K., Topping, B.H.V. and Chan, H.C., Three node triangular elements with one degree of freedom per node. *Engineering Computations*, **9**, 49–62, 1992.
- [HTF] Hetmaniuk, U., Tezaur, R. and Farhat, C., Review and assessment of interpolatory model order reduction methods for frequency response structural dynamics and acoustics problems. *Int. J. Numer. Meth. Engng.*, in press.
- [HTK] Hughes, T.J.R., Taylor, R.L. and Kanok-nukulchai, W., A simple and efficient element for plate bending. *Int. J. Numer. Meth. Engng.*, **11**, 1529–43, 1977.
- [HTT] Hughes, T.J.R., Taylor, R.L. and Tezduyar, T.E., Finite elements based upon Mindlin plate theory with particular reference to the four node bilinear isoparametric element. *J. Appl. Mech.*, **46**, 587–596, 1981.

- [Hu] Hughes, T.R.J., *The finite element method. Linear Static and Dynamic analysis*. Prentice Hall, 1987.
- [Hu2] Huang, H.C., *Static and dynamic analysis of plates and shells*. Springer-Verlag, Berlin, 1989.
- [HWW] Henshell, R.D., Walters, D. and Warburton, G.B., A new family of curvilinear plate bending elements for vibration and stability. *J. Sound Vibr.*, **20**, 327–343, 1972.
- [Hy] Hyc, M., *Predicting shear centre location in open cross sections of shear deformable thin walled beams*. XVIIth IUTAM Conference Grenoble, 1988.
- [IA] Irons, B.M. and Ahmad, S., *Techniques of finite elements*. Ellis Harwood, Chichester, 1980.
- [IA2] Iura, M. and Atluri, S.N., Formulation of a membrane finite element with drilling degrees of freedom. *Computational Mechanics*, **9**(6), 417–428, 1992.
- [Ib] Ibrahimbegovic, A., Quadrilateral finite elements for analysis of thick and thin plates. *Comput. Methods Appl. Mech. Engng.*, **110**, 195–209, 1993.
- [IO] Idelsohn, S.R. and Oñate, E., Finite volumes and finite elements: two “good friends”. *Int. J. Numer. Meth. Engng.*, **37**, 3323–3341, 1994.
- [Ir] Irons, B.M., A conforming quartic triangular element for plate bending. *Int. J. Numer. Meth. Engng.*, **1**, 29–46, 1969.
- [Ir2] Irons, B.M., The semiloof shell element, *Finite elements for thin shells and curved members*. Chap. **11**, 197–222, D.G. Ashwell and R.H. Gallagher (Eds.), J. Wiley, 1976.
- [ITW] Ibrahimbegovic, A., Taylor, R.L. and Wilson, E.L., A robust quadrilateral membrane finite element with drilling degrees of freedom. *Int. J. Numer. Meth. Engng.*, **30**, 445–457, 1990.
- [Je] Jetteur, Ph., Improvement of the quadrilateral JET shell element for a particular class of shell problems. Technical Report IREM 87/1, Ecole Polytechnique Federale de Lausanne, February 1987.
- [Ji] Jirousek, J., A family of variable section curved beam and thick shell or membrane-stiffening isoparametric elements. *Int. J. Num. Meth. Eng.*, **17**, 171–86, 1981.
- [JO] Jovicevic, J. and Oñate, E., Analysis of beams and shells using a rotation-free finite element-finite volume formulation. Monograph No. M43, CIMNE, Barcelona, 1999.
- [Jor] Jordan, F.F., Stresses and deformations of the thin-walled pressurized torus. *J. Aerospace Science*, **29**, 213–25, 1962
- [JP] Jang, J. and Pinsky, P., An assumed covariant strain based 9-node shell element. *Int. J. Numer. Meth. Engng.*, **24**, 2389–2411, 1987.

- [JP2] Jang, J. and Pinsky, P. Convergence of curved shell elements based on assumed covariant strain interpolations. *Int. J. Numer. Meth. Engng.*, **26**, 329–347, 1988.
- [JS] Jones, R.E. and Strome, D.R., Direct stiffness method of analysis of shells of revolution using curved elements. *A.I.A.A.J.*, **4**, 1519–25, 1965.
- [JS2] Jones, R.E. and Strome, D.R., A survey of analysis of shells by the displacement method. *Proc. Conf on Matrix Methods in Struct. Mech.*, Air Force Inst. of Tech., Wright-Patterson, Air Force Base, Ohio, 1965.
- [Ka] Kanok-nukulchai, W., A simple and efficient finite element for general shell analysis. *Int. J. Numer. Meth. Engng.*, **14** (2), 179–200, 1979.
- [Ka2] Katili, I., A new discrete Kirchhoff-Mindlin element based on Mindlin-Reissner plate theory and assumed shear strain fields. Part I. An extended DKT element for thick-plate bending analysis. *Int. J. Numer. Methods Engng.*, **36**, 1859–1883, 1993.
- [Ka3] Katili, I., A new discrete Kirchhoff-Mindlin element based on Mindlin-Reissner plate theory and assumed shear strain fields. Part II. An extended DKQ element for thick-plate bending analysis. *Int. J. Numer. Methods Engng.*, **36**, 1885–1908, 1993.
- [KA] Kikuchi, F. and Ando, Y., A new variational functional for the finite element method and its application to plate and shell problems. *Nuclear Engineering and Design*, **21**(1), 95–113, 1972.
- [KBLW] Kiendl, J., Bletzinger, K.-U., Linhard, J. and Wüchner, R., Isogeometric shell analysis with Kirchhoff-Love elements. *Comput. Methods Appl. Mech. Engng.*, **198**, 3902–3914, 2009.
- [KDJ] Kapuria, S., Dumir, P.C. and Jain, N.K., Assessment of zigzag theory for static loading, buckling, free and forced response of composite and sandwich beams. *Composite Structures*, **64**, 317–27, 2004.
- [KK] Kantorovitch, L.V. and Krylov, V.I., *Approximate methods of higher analysis*. J. Wiley, 1958.
- [Ki] Kirchhoff, G., Über das Gleichgewicht und die Bewegung einer elastischen Scheibe. *J. Reine und Angewandte Mathematik*, **40**, 51–88, 1850.
- [Kl] Klein, S., A study of the matrix displacement method as applied to shells of revolution. *Proc. Conf. on Matrix Methods in Struct. Mech.*, Air Force Inst. of Tech., Wright Patterson Air Force Base, Ohio, Oct. 1965.
- [Ko] Koiter, W.T., A consistent first approximation in the general theory of thin elastic shells. *First IUTAM Sympos.*, W.T. Koiter (ed.), North Holland, **2**, 1960.
- [Ko2] Kollár, L.P., Flexural-torsional buckling of open section composite columns with shear deformation. *International Journal of Solids and Structures*, **38**(42-43), 7525–7541, 2001.

- [KP] Kollár, L.P. and Pluzsik, A., Analysis of thin-walled composite beams with arbitrary layup. *Journal of Reinforced Plastics and Composites*, **21**(16), 1423–1465, 2002.
- [Kr] Kraus, H., *Thin elastic shells*. J. Wiley, 1967.
- [KS] Kabir, A.F. and Scordelis, A.C., CURDI—Computer program for curved bridges and flexible bents. *Internal Report, Dept. Civil Engineering*, Univ. of California, Berkeley, Septiembre, 1979.
- [KS2] Kim, R.Y. and Soni, S.R., Supression of free-edge delaminations by hybridization. In ICCM-V, San Diego, CA, July 1985.
- [KSK] Kim, N.-I., Shin, D.K. and Kim, M.-Y., Exact solutions for thin-walled open-section composite beams with arbitrary lamination subjected to torsional moment. *Thin-Walled Structures*, **44**(6), 638–654, 2006.
- [KV] Kandil, N. and Verchery, G., New method of design for stacking sequences of laminate. Proceeding of Computer Aided Design in Composite Material Technology, C.A. Brebbia, N.P. de Wilde and W.R. Blain (Eds.), Computational Mechanic Publications, Southampton, pp. 243–257, 1988.
- [LB] Lardeur, P.A. and Batoz, J.L., Composite plate analysis using a new discrete shear triangular finite element. *Int. J. Numer. Meth. Engng.*, **27**(2), 343–359, 1989.
- [LC] Loo, Y.C. and Cusens, Y.A.R., *The finite strip method in bridge engineering*. Viewpoint, 1978.
- [LD] Lynn, P.P. and Dhillon, B.S., Triangular thick plate bending elements. In *Proceedings 1st Internacional Conference on Structural Mechanics in Reactor Technology*, M6/5, Berlin, 1971.
- [Le] Lee, J.H., Flexural analysis of thin-walled composite beams using shear-deformable beam theory. *Composite Structures*, **70**(2), 212–222, 2005.
- [Li] Livesley, R.K., *Matrix methods in structural analysis*. 2nd ed., Pergamon Press, 1975.
- [LKM] Lim, P.T.K., Kilford, J.T. and Moffatt, K.R., Finite element analysis of curved box girder bridges. In *Developments in Bridge Design and Constructions*, K.C. Rockey *et al.* (Eds.), Crosby Lockwood, London, 264–86, 1971.
- [LL] Liu, D. and Li, X., An overall view of laminate theories based on displacement hypothesis. *Journal of Composite Materials*, **30**(14), 1539–1561, 1996.
- [LL2] Li, X. and Liu D., An interlaminar shear stress continuity theory for both thin and thick composite laminates. *J. Appl. Mech.*, **59**, 502–509, 1992.
- [LL3] Lee, J.H. and Lee, S., Flexural-torsional behavior of thin-walled composite beams. *Thin-walled Structures*, **42**, 1293–1305, 2004.

- [LS] Lee, C.Y. and Small, J.C., Finite layer analysis of laterally loaded piles in cross-anisotropic soils. *Int. J. for Num. Anal. Meth. in Geomechanics*, **15**(11), 785–808, 1991.
- [LWB] Linhard, J., Wüchner, R. and Bletzinger, K.-U. Upgrading membranes to shells - the CEG rotation-free shell element and its application in structural analysis. *Finite Element Anal. Des.*, **44**, 63–74, 2007.
- [Ly] Lyons, L.P.R., *A general finite element system with special reference to the analysis of cellular structures*. Ph D. Thesis, Imp. College of Science and Technol., Londres, 1977.
- [Ma] MacNeal, R.H., A simple quadrilateral shell element. *Computers and Structures*, **8**, 175–83, 1978.
- [Ma2] MacNeal, R.H., *Finite elements: their design and performance*. Marcel Dekker, New York, 1994.
- [Ma3] Marguerre, K., Zur thorie der Gekrummten platte grosser formänderung. *Proc. 5th. Int. Congress Appl. Mech.*, J. Wiley, Londres, 98–101, 1938.
- [Mar] Marshall, A., *Handbook of Composites*. G. Lubin (ed.), SPI-Van Nostrand Reinhold, New York, 1982.
- [MB] Massa, J.C. and Barbero, E.J., A strength of materials formulation for thin-walled composite beams with torsion. *Journal of Composite Materials*, **32**(17), 1560–1594, 1998.
- [Me] Melosh, R.J., A stiffness matrix for the analysis of thin plates in bending. *Journal of Aerospace Science*, **28**, 1, 34–42, 1961.
- [Me2] Melosh, R.J., Basis of derivation of matrices for the direct stiffness method. *A.I.A.A.J.*, **1**, **7**, 1631–37, 1963.
- [Me3] Melosh, R.J., Structural analysis of solids. *J. Structural Engineering, ASCE*, **4**, 205–223, August 1963.
- [MG] Murthy, S.S. and Gallagher, R.H., A triangular thin shell finite element based on discrete Kirchhoff theory. *Comput. Methods Appl. Mech. Engrg.*, **54**, 197–222, 1986.
- [MH] Malkus, D.S. and Hughes, T.J.R., Mixed finite element methods-reduced and selective integration techniques: A unification of concepts. *Comput. Methods Appl. Mech. Engrg.*, **15**, 63–81, 1978.
- [MH2] MacNeal, R.H., and Harter, R.L., A proposed standard set of problems to test finite element accuracy. *Finite Elements in Analysis and Design*, **1**, 3–20, 1985.
- [Mi] Mindlin, R.D., Influence of rotatory inertia and shear in flexural motions of isotropic elastic plates. *J. Appl. Mech.*, **18**, 31–38, 1951.
- [Mo] Morley, L.S.D., The triangular equilibrium element in the solution of plate bending problems. *Aero Quart.*, **19**, 149–69, 1968.

- [Mo2] Morley, L.S.D., On the constant moment plate bending element. *J. Strain Analysis*, **6**, 10–4, 1971.
- [Mo3] Morley, L.S.D., Finite element criteria for some shells. *Int. J. Numer. Meth. Engng.*, **20**, 587–92, 1984.
- [Mo4] Morley, L.S.D., *Skew Plates and Structures*. Macmillan, New York, 1963. International Series of Monographs in Aeronautics and Astronautics.
- [Mo5] Morris, A.J., A deficiency in current finite elements for thin shell applications. *Int. J. Solids Struct.*, **9**, 331–45, 1973.
- [Mo6] Mollmann, H., *Introduction to the theory of thin shells*. John Wiley, 1981.
- [MS] Mebane, P.M. and Stricklin, J.A., Implicit rigid body motion in curved finite elements. *AIAA J*, **9**(2), 344–345, 1971.
- [MS2] Moan, T. and Soreide, T., The analysis of stiffened plates considering non linear material and geometrical behaviour. *World Congress on Finite Elements in Structural Mechanics*, (Ed. J. Robinson), Robinson & Assoc., Verwood, 14.1–14.28, 1975.
- [MSch] Milford, R.V. and Schnobrich, W.C., Degenerated isoparametric finite elements using explicit integration. *Int. J. Numer. Meth. Engng.*, **23**, 133–154, 1986.
- [Mu] Murakami, H., Laminated composite plate theory with improved in-plane responses. *ASME, Journal of Applied Mechanics*, **53**, 661–666, 1986.
- [Na] Naghdi, P.M., *The theory of shells and plates*. Handbuch der Physik, Vol. VI, A2 (Flügge ed.), Springer Verlag, Berlin, 1972.
- [NB] Noor, A.K. and Burton, W.S., Assessment of shear deformation theories for multilayered composite plates. *ASME, Applied Mechanics Review*, **42**(1), 1–13, 1989.
- [Ni] Niordson, F.I., *Shell theory*. North-Holland, Amsterdam, 1985.
- [No] Novozhilov, V.V., *Theory of thin shells*. P. Noordhoff Ltd., Groningen, The Netherlands, 1959.
- [No2] Noor, A.K., Bibliography of monographs and surveys on shells. *Applied Mechanics Review*, **43**(9), 223–234, 1990.
- [NP] Noor, A.K. and Peters, J., Analysis of laminated anisotropic shells of revolution. In *Finite element methods for plate and shell structures, Vol. 2, Formulations and algorithms*, Pineridge Press, 179–212, 1986.
- [Ny] Nygard, M.K., *The free formulation for non linear finite elements with applications to shells*. Ph. D. Thesis, Univ. Trondheim, Norway, 1986.
- [NU] Nay, R.A. and Utku, S., An alternative to the finite element method. *Variational Methods Engineering*, **1**, 1972.

- [OA] Obinata, G. and Anderson, D.O., *Model reduction for control system design*. Springer, 2001.
- [OB] Oñate, E. and Bugeda, G., A study of mesh optimality criteria in adaptive finite element analysis. *Engineering Computations*, **10**(4), 307–321 1993.
- [OC] Oñate, E. and Castro, J., Derivation of plate elements based on assumed shear strain fields. In *Recent Advances on Computational Structural Mechanics*, P. Ladeveze and O.C. Zienkiewicz (Eds.), Elsevier Pub, 1991.
- [OC2] Oñate, E. and Cervera, M., Derivation of thin plate bending elements with one degree of freedom per node. *Engineering Computations*, **10**, 543–561, 1993.
- [OCK] Oñate, E., Castro, J. and Kreiner, R., Error estimation and mesh adaptivity techniques for plate and shell problems. In *The 3rd. International Conference on Quality Assurance and Standards in Finite Element Methods*, Stratford-upon-Avon, England, 10–12 September, 1991.
- [OCM] Oñate, E., Cendoya, P. and Miquel, J., Non linear explicit dynamic analysis of shells using the BST rotation-free triangle. *Engineering Computations*, **19**(6), 662–706, 2002.
- [OCZ] Oñate, E., Cervera, M. and Zienkiewicz, O.C., A finite volume format for structural mechanics. *Int. J. Numer. Meth. Engng.*, **37**, 181–201, 1994.
- [OEO] Oñate, E., Eijo, A. and Oller, S., Two-noded beam element for composite and sandwich beams using Timoshenko theory and refined zigzag kinematics. Publication PI346, CIMNE, Barcelona 2010.
- [OEO2] Oñate, E., Eijo, A. and Oller, S., Simple and accurate two-noded beam element for composite laminated and sandwich beams using a refined zigzag theory. *Comput. Methods Appl. Mech. Engng.*, **213–216**, 362–382, 2012.
- [OEO3] Oñate, E., Eijo, A. and Oller, S., Modeling of delamination in composite laminated beams via 2-noded Timoshenko beam element and zigzag kinematics. Research Report PI383, CIMNE, Barcelona 2012.
- [OEO4] Oñate, E., Eijo, A. and Oller, S., Two-noded troncoconical element for composite laminated axisymmetric shells based on a refined zigzag theory. Research Report PI376, CIMNE, Barcelona, 2012.
- [OF] Oñate, E. and Flores, F.G., Advances in the formulation of the rotation-free basic shell triangle. *Comput. Methods Appl. Mech. Engng.*, **194**, 2406–2443, 2005.
- [OF2] Owen, D.R.J. and Figueiras, J.A., Anisotropic elasto-plastic finite element analysis of thick and thin plates and shells. *Int. J. Numer. Meth. Engng.*, **19**, 541–566, 1983.
- [OFM] Oñate, E., Flores, F.G. and Marcipar, J., Membrane structures formed by low pressure inflatable tubes. new analysis methods and recent constructions. In *Textile Components and Inflatable Structures II*, E. Oñate and B. Kröplin (eds.), pp. 163–196, Springer, 2008.

- [OFN] Oñate, E., Flores, F.G. and Neamtu, L., Enhanced rotation-free basic shell triangle. Applications to sheet metal forming. In *Computational Plasticity*, E. Oñate and R. Owen (Eds.), pp. 239–265, Springer 2007.
- [OG] Oñate, E. and García, J., A stabilized finite element method for fluid-structure interaction with surface waves using a finite increment calculus formulation. *Comput. Methods Appl. Mech. Engrg.*, **182**(1-2), 355–370, 2000.
- [OGI] Oñate, E., García, J. and Idelsohn, S.R., Ship hydrodynamics. Encyclopedia of Comput. Mechanics, E. Stein, R. de Borst and T.J.R. Hughes (Eds.), **3**, Chapter 18, 579–610, 2004.
- [OHG] Oñate, E., Hinton, E. and Glover, N., Techniques for improving the performance of isoparametric shell elements. *Applied Numerical Modelling*, C. Brebbia and E. Alarcón (Eds.), Pentech Press, 1979.
- [OK] Oñate, E. and Kröplin, B. (Eds.), *Textile Components and Inflatable Structures*. Springer, Netherlands, 2005.
- [OK2] Oñate, E. and Kröplin, B. (Eds.), *Textile Components and Inflatable Structures II*. Springer, Netherlands, 2008.
- [OL] Owen, D.R.J. and Li, Z.H., A refined analysis of laminated plates by finite element displacement methods-I. Fundamentals and static analysis; II Vibration and stability. *Computers and Structures*, **26**, 907–923, 1987.
- [OL2] Owen, D.R.J. and Li, Z.H., Elasto-plastic numerical analysis of anisotropic laminated plates by a refined finite element model. *Comput. Methods Appl. Mech. Engrg.*, **70**, 349–365, 1988.
- [On] Oñate, E., *Comparisons of finite strip methods for the analysis of box girder bridges*. M. Sc. Thesis, Civil, Eng. Dpt., Univ. College of Swansea, 1976.
- [On2] Oñate, E., Edge effects in composite materials. *Analysis and design of composite materials structures*, Chap. 21, Y. Surrel, A. Vantrín and G. Verchev (Eds.), Pluralis, 1990.
- [On3] Oñate, E., A review of some finite element families for thick and thin plate and shell analysis. In *Recent Developments in Finite Element Analysis*, T.J.R. Hughes, E. Oñate & O.C. Zienkiewicz (Eds.), CIMNE, Barcelona, 1994.
- [On4] Oñate, E., *Structural Analysis with The Finite Element Method. Vol. 1: Basis and Solids*, Springer-CIMNE, 2009.
- [OO] Oller, S. and Oñate, E., Advanced models for finite element analysis of composite materials. *Encyclopedia of Composites*, 2nd Edition, L. Nicolais and A. Borzacchiello (Eds.), J. Wiley & Sons, New Jersey, 2012.
- [OR] Oden, J.T. and Ripperger, E.A., *Mechanics of elastic structures*. 2nd Edition, Hemisphere Publishing Corporation, 1981.
- [OS] Oñate, E. and Suárez, B., A comparison of the linear, quadratic and cubic Mindlin strip element for the analysis of thick and thin plates. *Computers and Structures*, **17**, 427–39, 1983.

- [OS2] Oñate, E. and Suárez, B., The finite strip for the analysis of plate, bridge and axisymmetric shell problems. In *Finite element software for plate and shell analysis*, E. Hinton and D.R.J. Owen (Eds.), Pineridge Press, Swansea, 1984.
- [OS3] Oñate, E. and Suárez, B., An unified approach for the analysis of bridges, plates and axisymmetric shells using the linear Mindlin strip element. *Computers and Structures*, **17**, 3, 407–26, 1986.
- [OTZ] Oñate, E., Taylor, R.L. and Zienkiewicz, O.C., Consistent formulation of shear constrained Reissner-Mindlin plate elements. In C. Kuhn and H. Mang (Eds.), *Discretization Methods in Structural Mechanics*, pp. 169–180. Springer-Verlag, Berlin, 1990.
- [OZ] Oñate, E. and Zárate, F., Rotation-free triangular plate and shell elements. *Int. J. Numer. Meth. Engng.*, **47**, 557–603, 2000.
- [OZ2] Oñate, E. and Zárate, F., Rotation-free plate and beam elements with shear deformation effects. *Int. J. Numer. Meth. Engng.*, 2009.
- [OZ3] Oñate, E. and Zárate, F., Rotation-free beam elements. A review. Research Report PI384, CIMNE, Barcelona 2012.
- [OZF] Oñate, E., Zárate, F. and Flores, F., A simple triangular element for thick and thin plate and shell analysis. *Int. J. Numer. Meth. Engng.*, **37**, 25–2582, 1994.
- [OZST] Oñate, E., Zienkiewicz, O.C., Suárez, B. and Taylor, R.L., A general methodology for deriving shear constrained Reissner-Mindlin plate elements. *Int. J. Numer. Meth. Engng.*, **33**(2), 345–367, 1992.
- [Pa] Parekh, C.J., *Finite element solution system*. PhD Thesis, Department of Civil Engineering, University of Wales, Swansea, 1969.
- [Pa2] Parisch, H., A critical survey of the 9-noded degenerated shell element with special emphasis on thin shell application and reduced integration. *Comput. Methods Appl. Mech. Engng.*, **20**, 323–50, 1979.
- [Pan] Panc, W., *Theories of elastic plates*. Sifthoff and Noordhoff, 1975.
- [Paw] Pawsey, S.E., *The analysis of moderately thick to thin shells by the finite element method*. PhD dissertation, Department of Civil Engineering, University of California, Berkeley, 1970 (also SESM Report 70-12).
- [PC] Pawsey, S.E. and Clough, R.W., Improved numerical integration of thick shell elements. *Int. J. Numer. Meth. Engng.*, **3**, 545–86, 1971.
- [PC2] Phaal, R., Calladine, C.R., A simple class of finite elements for plate and shell problems. I: Elements for beams and thin plates. *Int. J. Numer. Meth. Engng.*, **35**, 955–977, 1992.
- [PC3] Phaal, R., Calladine, C.R., A simple class of finite elements for plate and shell problems. II: An element for thin shells with only translational degrees of freedom. *Int. J. Numer. Meth. Engng.*, **35**, 979–996, 1992.

- [PCh] Pilkey, W.D. and Chang, P.Y., *Modern formulas for statics and dynamics*. McGraw-Hill, New York, 1978.
- [PF] Perruchoud, M. and Frey, F., How to modelize beams of slab-beam structures in a simple way. Rapport Interne IREM90/3, Dpt. Genie Civil, Ecole Polytechnique Federale de Lausanne, Abril, 1990.
- [PFTV] Press, W.H., Flannery, B.P., Teukolsky, S.A. and Vetterling, W.T., *Numerical Recipes. The art of Scientific Computing*, Cambridge Univ. Press, 1986.
- [PHZ] Pugh, E.D.L., Hinton, E. and Zienkiewicz, O.C., A study of quadrilateral plate bending elements with reduced integration. *J. Appl. Mech.*, **12**, 1059–1079, 1978.
- [Pi] Pilkey, W.D., *Analysis and design of elastic beams*. Computational Methods, Wiley 2002.
- [PK] Pluzsik, A. and Kollár, L.P., Effects of Shear deformation and restrained warping on the displacements of composite beams. *Journal of Reinforced Plastics and Composites*, **21**(17), 1517–1541, 2002.
- [PN] Panda, S.C. and Natarajan, R., Finite element analysis of laminated shells of revolution. *Computers and Structures*, **6**, 61–64, 1976.
- [POM] Pellegrini, L., Oñate, E. and Miquel, J., Development and validation of numerical procedure for analysis of sails in racing boats with the finite element method (in Spanish). Research Report IT356, CIMNE, Barcelona, 2000.
- [PP1] Pipes, R.B. and Pagano, N.J., Interlaminar stresses in composite laminates under uniform axial extension. *Journal of Composite Materials*, **4**(4), 204–221, 1970.
- [PP2] Pagano, N.J. and Pipes, R.B., Influence of stacking sequence on laminate strength. *Journal of Composite Materials*, **5**(1), 50–57, 1971.
- [PP3] Pagano, N.J. and Pipes, R.B., Some observations on the interlaminar strength of composite laminates. *International Journal of Mechanical Sciences*, **15**, 679–688, 1973.
- [PP4] Prinja, N.K. and Puri, A.K., An introduction to the use of material models in FE. NAFEMS, Publication, UK, Hardback, 88 pp., November 2005.
- [PPL] Popov, E.R., Penzien, J. and Liu, Z.A., Finite element solution for axisymmetric shells. *Proc. Am. Soc. Civil Eng.*, EM, 119–45, 1964.
- [Pr] Przemieniecki, J.S., *Theory of matrix structural analysis*. McGraw-Hill, New York, 1968.
- [PT] Papadopoulos, P. and Taylor, R.L., A triangular element based on Reissner-Mindlin plate theory. *Int. J. Numer. Meth. Engng.*, **5**, 1029–51, 1990.
- [PT2] Piegl, L. and Tiller, W., *The NURBS Book*. Monographs in Visual Communication. 2nd edition, Springer-Verlag, New York, 1997.

- [Ral] Ralston, A., *A first course in numerical analysis*. McGraw-Hill, New York, 1965.
- [Raz] Razzaque, A., *Finite Element analysis of plates and shells*. Ph.D. Thesis, Civil Eng. Dpt., Univ. of Wales, Swansea, 1972.
- [RB] Rowe, R.K. and Booker, J.R., A finite layer technique for calculating three-dimensional pollutant migration in soil. *Geotechnique*, **36**, 205–214, 1986
- [RCh] Rossow, M.P. and Chen, K.C., Computational efficiency of plate elements. *ASCE*, **103**, St2, 447–51, 1977.
- [Re] Reissner, E., The effect of transverse shear deformation on the bending of elastic plates. *J. Appl. Mech.*, **12**, 69–76, 1945.
- [Re2] Reissner, E., A note on variational theorems in elasticity. *International Journal of Solids and Structures*, **1**, 93–95, 1965.
- [Re3] Reissner, E., Reflection on the theory of elastic plate. *Appl. Mech. Rev.*, **38**(11), 1453–1464, 1985.
- [Red] Reddy, J.N., On refined computational model of composite laminates. *Int. J. Numer. Meth. Engng.*, **27**, 361–382, 1989.
- [Red2] Reddy, J.N., *Mechanics of laminated composite plates and shells. Theory and analysis*. 2nd Edition, CRC Press, Boca Raton, 2004.
- [Ro] Rogers, D.F., *An Introduction to NURBS with historical perspective*. Academic Press, San Diego, CA, 2001.
- [RTL] Rio, G., Tathi, B. and Laurent, H., A new efficient finite element model of shell with only three degrees of freedom per node. Applications to industrial deep drawing test. In *Recent Developments in Sheet Metal Forming Technology*, Barata Marques, M.J.M. (ed.), 18th IDDRG Biennial Congress, Lisbon, 1994.
- [Sa] Savoia, M., On the accuracy of one-dimensional models for multilayered composite beams. *Int. J. Solids Struct.*, **33**, 521–44, 1996.
- [San] Sander, G., Bornes superieures et inféreures dans l'analyse matricielle des plaques en flexion-torsion. *Bull Soc. Royale des Sc. de Liege*, **33**, 456–94, 1964.
- [San2] Sansour, C., A theory and finite element formulation of shells at finite deformations including thickness change: circumventing the use of a rotation vector. *Arch. Appl. Mech.*, **10**, 194–216, 1995.
- [SB] Stolarski, H. and Belytschko, T., Membrane locking and reduced integration for curved elements. *J. Appl. Mech.*, **49**, 172–6, 1982.
- [SB2] Sabourin, F. and Brunet, M., Detailed formulation of the rotation-free triangular element “S3” for general purpose shell analysis. *Engrg. Comput.*, **23**, 460–502, 2006.

- [SBCK] Stolarski, H., Belytschko, T., Carpenter, N. and Kennedy, J.M., A simple triangular curved shell element. *Engineering Computations*, **1**, 3, 210–8, 1984.
- [SBL] Stolarski, H., Belytschko, T. and Lee, S.-H., A review of shell finite element and co-rotational shell theories. *Computational Mechanics Advances*, **2**, 125–212, 1995.
- [SCB] Stolarski, H., Carpenter, N. and Belytschko, T., Bending and shear mode decomposition in C0 structural elements. *Journal of Structural Mechanics, ASCE*, **11**(2), 153–176, 1983.
- [SCB2] Sabourin, F., Carbonnière, J. and Brunet, M., A new quadrilateral shell element using 16 degrees of freedom. *Engineering Computations*, **26**, 500–540, 2009.
- [SCLL] Soh, A.K., Cen, S., Long, Y.Q. and Long, Z.F., A new twelve DOF quadrilateral element for analysis of thick and thin plates. *Eur. J. Mech. A/Solids*, **20**, 299–326, 2001.
- [SD] Smith, I.M. and Duncan, W., The effectiveness of nodal continuities in finite element analysis of thin rectangular and skew plates in bending. *Int. J. Numer. Meth. Engrng.*, **2**, 253–258, 1970.
- [SF] Simó, J.C. and Fox, D.D., On a stress resultant geometrically exact shell model. Part I. Formulations and optimal parametrizations. *Comput. Methods Appl. Mech. Engrg.*, **72**, 267–304, 1989.
- [SFR] Simó, J.C., Fox, D.D. and Rifai, M.S., On a stress resultant geometrically exact shell model. Part II. The linear theory: Computational aspects. *Comput. Methods Appl. Mech. Engrg.*, **73**, 53–92, 1989.
- [SG] Salerno, V.L. and Goldberg, M.A., Effect of shear deformation on the bending of rectangular plates. *Journal of Applied Mechanics, ASME*, 54–58, March 1960.
- [Sh] Sharman, P.W., Analysis of structures with walled open sections. *Int. J. Mech. Science*, **27** (10), 665–677, 1985.
- [SHTG] Stricklin, J.A., Haisler, W., Tisdale, P. and Gunderson, R., A rapidly converging triangular plate element. *A.I.A.A.J.*, **7**, 180–181, 1969.
- [SJ] Singh, P.N. and Jha, P.K., *Elementary mechanics of solids*. Wiley Eastern, New Delhi, 1980.
- [SK] Soni, S.R. and Kim, R.Y., Analysis of suppression of free edge delamination by introducing adhesive layer. Internal Report, Univ. of Dayton Research Inst., Dayton Ohio, 45469 USA, 1986.
- [SL] Sanders Jr., J.L. and Liepins, A., Toroidal membrane under internal pressure. *A.I.A.A.J.*, **1**, 2105–10, 1963.
- [SLC] Soh, A.K., Long, Z.F. and Cen, S., A new nine d.o.f. triangular element for analysis of thick and thin plates. *Comput. Mech.*, **24**, 408–417, 1999.

- [SM] Sawko, F. and Merriman, Y.P.A., An annular segment finite element for plate bending. *Int. J. Numer. Meth. Engng.*, **3**, 119–129, 1971.
- [SMO] Suárez, B., Miquel, J. and Oñate, E., A general thick finite strip method for plates and shells. Research Report, PI377, Barcelona, 2012.
- [SNP] Stricklin, J.A., Navaratna, D.R. and Pian, T.H.H., Improvements in the analysis of shells of revolution by matrix displacement method: Curved elements. *A.I.A.A.J.*, **4**, 2069–72, 1966.
- [Sp] Specht, B., Modified shape function for three noded plate bending element passing the patch test. *Int. J. Numer. Meth. Engng.*, **26**, 705–15, 1988.
- [SP] Sze, K.Y. and Pan, Y.S., Hybrid stress tetrahedral elements with Allman's rotational DOFs. *Int. J. Numer. Meth. Engng.*, **48**(7), 1055–1070, 2000.
- [SPH] Stanley, G.M., Park, K.C. and Hughes, T.J.R., Continuum-based resultant shell elements. In *Finite Element Method for Plate and Shell Structures. Vol. 1: Element Technology*, T.J.R. Hughes and E. Hinton (Eds.), Pineridge Press, Swansea, 1986, 1–45.
- [Sr] Srinivas, S., A refined analysis of composite laminates. *J. Sound and Vibration*, **39**(4), 495–507, 1973.
- [SR] Srinivas, S. and Rao, A.K., Flexure of thick rectangular plates. *J. Appl. Mech.*, *ASME*, **40**(1), 298–299, 1973.
- [Sta] Stanley, G.M., *Continuum-based shell elements*. Ph.D. Thesis, Dpt. Appl. Mechanics, Stanford Univ., 1985.
- [Sta2] Stavsky, Y., Bending and stretching of laminated plates. *ASCE, J. Engng. Mech.*, **87**, 31–36, 1961.
- [Ste] Stephen, N.G., Timoshenko's shear coefficient for a beam subjected to gravity loading, *J. Appl. Mech.*, **47** (1), 121–127, 1980.
- [ST] Sheikh, A.H. and Thomsen, O.T., An efficient beam element for the analysis of laminated composite beams of thin-walled open and closed cross sections. *Composites Science and Technology*, **68**, 2273–2281, 2008.
- [Su] Suárez, B., *A finite strip method based on Reissner-Mindlin theory for analysis of plates, bridges and axisymmetric shells (in spanish)*. Ph.D. Thesis, School of Civil Engineering, Technical University of Catalonia (UPC), 1982.
- [SV] Stenberg, R. and Vihinen, T., Calculations with some linear elements for Reissner-Mindlin plates. *European Conf. on New advances in Computational Structural Mechanics*, P. Lavedeze and O.C. Zienkiewicz (Eds.), 505–11, Giens, Abril, 1991.
- [SWC] Sze, K.Y., Wanji, C. and Cheung, Y.K., An efficient quadrilateral plane element with drilling degrees of freedom using orthogonal stress modes. *Computers and Structures*, **42**(5), 695–705, 1992.
- [Sz] Szilard, R., *Theory and analysis of plates: classical and numerical methods*. Prentice Hall, 1974.

- [Ta] Taylor, R.L., Finite element analysis of linear shell problems. In J.R. White-man (ed.), *The Mathematics of Finite Elements and Applications VI*, 191–203, Academic Press, London, 1988.
- [TA] Taylor, R.L. and Auricchio, F., Linked interpolation for Reissner-Mindlin plate elements. Part II. a simple triangle. *Int. J. Numer. Meth. Engng.*, **36**, 3057–3066, 1993.
- [TChC] Tham, L.G., Chong, K.P. and Cheung, Y.K., Flexural bending and axial compression of architectural sandwich panels by combined finite-prism-ship method. *J. Reinforced Plastics and Composites*, **1**(1), 16–28, 1982.
- [TD] Tessler, A. and Dong, S.B., On a hierarchy of conforming Timoshenko beam elements. *Computers and Structures*, **14**, 335–344, 1981.
- [TDG] Tessler, A., Di Sciuva, M. and Gherlone, M., A refined zigzag beam theory for composite and sandwich beams. *J. of Composite Materials*, **43**, 1051–1081, 2009.
- [TDG2] Tessler, A., Di Sciuva, M. and Gherlone, M., A consistent refinement of first-order shear-deformation theory for laminated composite and sandwich plates using improved zigzag kinematics. *J. of Mechanics of Materials and Structures*, **5**(2), 341–367, 2010.
- [TDG3] Tessler, A., Di Sciuva, M. and Gherlone, M., A homogeneous limit methodology and refinements of computationally efficient zigzag theory for homogeneous, laminated composite and sandwich plates. *Num. Meth. Partial Diff. Eqns.*, **27**(1), 208–229, 2011.
- [Te] Tessler, A., A C^0 anisoparametric three node shallow shell element. *Comput. Methods Appl. Mech. Engrg.*, **78**, 89–103.
- [Tho] Thorpe, J., Ph. Thesis, University of Dundee, 1976.
- [TH] Tessler, A. and Hughes, T.J.R., An improved treatment of transverse shear in the Mindlin type four quadrilateral element. *Comput. Methods Appl. Mech. Engrg.*, **39**, 311–35, 1983.
- [TH2] Tessler, A. and Hughes, T.J.R., A three node Mindlin plate element with improved transverse shear. *Comput. Methods Appl. Mech. Engrg.*, **50**, 71–101, 1985.
- [TH3] Teh, K.K. and Huang, C.C., Shear deformation coefficient for generally orthotropic beam. *Fib. Sci. and Tech.*, **12**, 73–80, 1979.
- [TH4] Tsai, S.W. and Hahn, H.T., *Introduction to Composite Materials*. Technomic Publishing Co. Inc., Lancaster, Pennsylvania, 1980.
- [Ti] Timoshenko, S.P., On the correction for shear of differential equations for transverse vibrations of prismatic bars. *Philosophical Magazine Series*, **41**, 744–746, 1921.
- [Ti2] Timoshenko, S.P., *Strength of Materials. Part 1: Elementary Theory and Problems*. Van Nostrand Company Inc., New York, 1958.

- [Ti3] Timoshenko, S.P., *Strength of Materials. Part 2: Advanced Theory and Problems*. 3rd. Edition, Van Nostrand-Reinhold, New York, 1956.
- [TK] Tocher, J.L. and Kapur, K.K., Comment on basis for derivation of matrices for the direct stiffness method. *A.I.A.A.J.*, **6**, 1215–16, 1965.
- [TM] Toledano, A. and Murakami, H., A higher-order laminate plate theory with improved in-plane response. *Int. J. Solids and Struct.*, **23**, 111–131, 1987b.
- [To] Too, J.J.M., *Two dimensional, plate, shell and finite prism isoparametric elements and their application*. PhD Thesis, Department of Civil Engineering, University of Wales, Swansea, 1970.
- [Ts] Tsai, S.W., *Composites Design*. 4th Edition, Think Composites, Paris, 1988.
- [Tu] Tu, T., *Performance of Reissner-Mindlin elements*. PhD thesis, Rutgers University, Department of Mathematics, 1998.
- [TW] Timoshenko, S.P. and Woinowsky-Krieger S., *Theory of Plates and Shells*. McGraw-Hill, New York, 3rd Edition, 1959.
- [TZSC] Taylor, R.L., Zienkiewicz, O.C., Simó, J.C. and Chan, A.H.C., The patch test - A condition for assessing FEM convergence. *Int. J. Numer. Meth. Engrg.*, **22**, 32–62, 1986.
- [Ug] Ugural, A.C., *Stresses in plates and shells*. MacGraw-Hill, 1981.
- [UO] Ubach, P.A. and Oñate, E., New rotation-free finite element shell triangle using accurate geometrical data. *Comput. Methods Appl. Mech. Engrg.*, **199**, 383–391, 2010.
- [Va] Vargas, P., *A finite element formulation for composite laminated thin-walled beams with open section*. Ph.Thesis (in Spanish), Technical University of Catalonia (UPC), Barcelona, July 2011.
- [VGM+] Versino D., Gherlone M., Mattone M., Di Sciuva M. and Tessler A., C^0 triangular elements based on the Refined Zigzag Theory for multilayered composite and sandwich plates. *Composites: Part B, Engineering*, pp. 13, 2012.
- [Vi] Vinson, J.R., *The behaviour of thin walled structures, beams, plates and shells*. Kluwer Academic, Publishers, 1989.
- [VK] Voyiadjis, G.Z. and Karamandlidis, D. (Eds.), *Advances in the theory of plates and shells*. Studies in Appl. Mech. 24, Elsevier, 1990.
- [Vl] Vlasov, V.Z., *Thin-walled Elastic Beams*. Israel Program for Scientific Translations, 1961.
- [Vl2] Vlasov, V.Z., General theory of shells and its application to engineering. *NASA TTF-99*, 1964.
- [Vl3] Vlachoutsis, S., Explicit integration for three dimensional degenerated shell finite elements. *Int. J. Numer. Meth. Engrg.*, **29**, 861–880, 1990.

- [VOO] Vargas, P., Oñate, E. and Oller, S., A family of finite elements for composite laminated thin-walled beams with open section. Publication PI389, CIMNE, Barcelona, 2012.
- [We] Wempner, G.A., Finite elements, finite rotations and small strains of finite shells. *Int. J. Solids Struct.*, **5**, 117–53, 1964.
- [We2] Wempner, G.A., *Mechanics of solids with applications to thin bodies*. Sijthoff and Noordhoff, 1981.
- [We3] Wempner, G.A., Mechanics and finite element of shells. *Applied Mechanics Review, ASME*, **42**(5), 129–142, 1989.
- [Wh] Whitney, J.M., *Structural analysis of laminated anisotropic plates*. Technomic Publishing Company, 1987.
- [Wh2] Whitney, J.M., The effect of transverse shear deformation in the bending of laminated plates. *J. Composite Materials*, **3**, 534–547, 1969.
- [Wi] Wilson, E.L., Structural analysis of axisymmetric solids. *A.I.A.A.J.*, **3**, 2269–74, 1965.
- [WJ] Weaver, W. (Jr.) and Johnston, P.R., *Finite elements for structural analysis*. Prentice Hall, 1984.
- [Wo] Wood, R.D., A shape function routine for the constant moment triangular plate bending element. *Engineering Computations*, **1**, 189–198, 1984.
- [WOK] Wempner, G.A., Oden, J.T. and Kross, D.A., Finite elements analysis of thin shells. *Eng. Mech. Div. Proc. ASCE*, **94**, EMS6, 1273–94, 1968.
- [WR] Wilkinson, J.H. and Reinsch, C., *Linear Algebra. Handbook for Automatic Computation*. Volume II. Springer-Verlag, Berlin, 1971.
- [WS] Willam, K.J. and Scordelis, A.C., Cellular structures of arbitrary plan geometry. *J. Struct. Div.*, ASCE, 1377–442, 1972.
- [WTDG] Wilson, E.L., Taylor, R.L., Doherty, W.P. and Ghabussi, T., Incompatible displacement models. In *Numerical and Computer Methods in Structural Mechanics*, S.T. Fenves, *et al.* (Eds.), Academic Press, 1973.
- [WV] Wong, C.C.K. and Vardy, A.E., Finite prism analysis of plates and shells. *Int. J. Numer. Meth. Engng.*, **21**, 529–41, 1985.
- [WZ] Wood, R.D. and Zienkiewicz, O.C., Geometrically non linear finite element analysis of beams, frames, arches and axisymmetric shells. *Computers and Structures*, **7**, 725–35, 1977.
- [Xu] Xu, Z., A thick-thin triangular plate element. *Int. J. Numer. Meth. Engng.*, **33**, 963–973, 1992.
- [XZZ] Xu, Z., Zienkiewicz, O.C. and Zeng, L.F., Linked interpolation for Reissner-Mindlin plate elements. Part III. an alternative quadrilateral. *Int. J. Numer. Meth. Engng.*, **36**, 3043–3056, 1993.

- [Ya] Yang, T.Y., *Finite Element Structural Analysis*. Prentice Hall, 1986.
- [YJS+] Yang, D.Y., Jung, D.W., Song, L.S., Yoo, D.J. and Lee, J.H., Comparative investigation into implicit, explicit and iterative implicit/explicit schemes for simulation of sheet metal forming processes. In *NUMISHEET'93*, Maki-nouchi, A., Nakamachi, E., Oñate, E. and Wagoner, R.H. (Eds.), RIKEN, Tokyo, 35–42, 1993.
- [Yo] Young, W.C., *Roak's formulas for stress and strain*. 6th Edition, McGraw-Hill, 1989.
- [YSL] Yang, T.Y., Saigal, S. and Liaw, D.G., Advances of thin shell finite elements and some applications. Version 1, *Computers and Structures*, **35**(4), 481–504, 1990.
- [YY] Yuqiu, L. and Yin, X., Generalized conforming triangular membrane element with vertex rigid rotational freedoms. *Finite Elements in Analysis and Design*, **17**(4), 259–271, 1994.
- [ZBMO] Zienkiewicz, O.C., Bauer, J., Morgan, K. and Oñate, E., A simple and efficient shell element for axisymmetric shells. *Int. J. Numer. Meth. Engng.*, **11**, 1545–1559, 1977.
- [ZCh] Zienkiewicz, O.C. and Cheung, Y.K., The finite element method for analysis of elastic isotropic and isotropic slabs. *Proc. Inst. Civ. Engng.*, **28**, 471–88. 1964.
- [ZCh2] Zienkiewicz, O.C. and Cheung, Y.K., Finite element procedures in the solution of plate and shell problems. In *Stress Analysis*, O.C. Zienkiewicz and G.S. Holister (Eds.), Chapter 8. John Wiley & Sons, Chichester, 1965.
- [ZCh3] Zienkiewicz, O.C. and Cheung, Y.K., Finite element methods of analysis for arch dam shells and comparison with finite difference procedure. In *Proc. Symp. on Theory of Arch Dams*, 123–140, Southampton University, 1964; Pergamon Press, Oxford, 1965.
- [ZK] Zhang, Y.X. and Kim, K.S., A simple displacement-based 3-node triangular element for linear and geometrically nonlinear analysis of laminated composite plates. *Comput. Methods Appl. Mech. Engng.*, **194**, 4607–4632, 2005.
- [ZL] Zienkiewicz, O.C. and Lefebvre, D., Three field mixed approximation and the plate bending problem. *Comm. Appl. Numer. Meth.*, **3**, 301–9, 1987.
- [ZL2] Zienkiewicz, O.C. and Lefebvre, D., A robust triangular plate bending element of the Reissner-Mindlin type. *Int. J. Numer. Meth. Engng.*, **26**, 1169–84, 1988.
- [ZO] Zienkiewicz, O.C. and Oñate, E., Finite elements versus finite volumes. Is there really a choice? In *Nonlinear Computation Mechanics. State of the Art*, Wriggers, P. and Wagner, W. (Eds.), Springer, Berlin, 1991.

- [ZO2] Zárata, F. and Oñate, E., Extended rotation-free shell triangles with transverse shear deformation effects. *Computational Mechanics*, **49**(4), 487–503, 2012.
- [ZO3] Zárata, F. and Oñate, E., Enhanced rotation-free beam and plate elements with shear deformation effects. Research Report PI385, CIMNE, Barcelona, 2012.
- [ZO4] Zárata, F. and Oñate, E., Finite elements versus finite volumes. Is there really a choice? In *Non Linear Computational Mechanics. State of the Art*. P. Wriggers and R. Wagner (Eds.), Springer 1992.
- [ZPK] Zienkiewicz, O.C., Parekh, C.J. and King, I.P., Arch dams analysed by a linear finite element shell solution program. In *Proc. Symp. on Theory of Arch Dams*, Pergamon Press, Oxford, 1965.
- [ZQTN] Zienkiewicz, O.C., Qu, S., Taylor, R.L. and Nakazawa, S., The Patch test for mixed formulations. *Int. J. Numer. Meth. Engng.*, **23**, 1873–1883, 1986.
- [ZT] Zienkiewicz, O.C. and Too, J.J.M., The finite prism in analysis of thick simply supported bridges. *Proc. Inst. Civ. Eng.*, **53**, 147–72, 1972.
- [ZT2] Zienkiewicz, O.C. and Taylor, R.L., *The Finite Element Method for Solid and Structural Mechanics*. Sixth Edition, Elsevier, 2005.
- [ZTPO] Zienkiewicz, O.C., Taylor, R.L., Papadopoulos P. and Oñate, E., Plate bending elements with discrete constraints: New Triangular Elements. *Computers and Structures*, **35**, pp, 4, 505–2, 1990.
- [ZTT] Zienkiewicz, O.C., Too, J.J.M. and Taylor, R.L., Reduced integration techniques in general analysis of plates and shells. *Int. J. Numer. Meth. Engng.*, **3**, 275–90, 1971.
- [ZTZ] Zienkiewicz, O.C., Taylor, R.L. and Zhu, J.Z., *The Finite Element Method. Its Basis and Fundamentals*. Sixth Edition, Elsevier, 2005.
- [ZZZ+] Zienkiewicz, O.C., Xu, Z., Zeng, L.F., Samuelsson, A. and Wiberg, N.-E., Linked interpolation for Reissner-Mindlin plate elements. Part I. A simple quadrilateral element. *Int. J. Numer. Meth. Engng.*, **36**, 3043–3056, 1993.