

Main publications by Anders Eriksson.

- [1] A. Eriksson. *The Finite Element Method for Sheet Metal Structures. Development of a Computer Program.* Dr. thesis, Dept. Struct. Engng., Royal Inst. Techn., Swedish Council for Building Research, Stockholm, 1980. Document D31:1980.
- [2] A. Eriksson, L. Andersson, and J. Ludvigsson. *Datorn för byggnadskonstruktionsarbete — metoder, möjligheter och risker.* Byggforskningsrådet, Stockholm, 1983. Rapport R137:1983.
- [3] A. Eriksson. Some remarks on the incremental/iterative solution of non-linear F. E. problems. Technical report, Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1985.
- [4] A. Eriksson. Datorer och betongnormer. *Nordisk betong*, 30:55–58, 1986.
- [5] A. Eriksson and P.-O. Thomasson. On the behaviour of clamped plates, loaded in compression. Some results from computer calculations. In *ECCS International Colloquium on Stability of Plate and Shell Structures*, Ghent, 1987.
- [6] A. Eriksson. Constraints and measures for N-R corrections in non-linear structural finite element calculations. Technical report, Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1987.
- [7] A. Eriksson. Using eigenvector projections to improve convergence in non-linear finite element equilibrium iterations. *Int. J. Numer. Meth. Eng.*, 24:497–512, 1987.
- [8] A. Eriksson. On the formulation of a shell element based on a T. L. reference frame and shallow shell strains. Technical report, Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1987.
- [9] A. Eriksson. Using an element-wise ‘adapted’ reference system for large displacement shell analysis. Technical report, Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1987.
- [10] A. Eriksson. On some path-related measures for non-linear structural F. E. problems. *Int. J. Numer. Meth. Eng.*, 26:1791–1803, 1988.
- [11] A. Eriksson. *Några matris- och datormetoder för Väg- och Vattenbyggare.* Inst. för Brobyggnad, KTH, Stockholm, 1989.
- [12] A. Eriksson. On linear constraints for Newton-Raphson corrections and critical point searches in structural F. E. problems. *Int. J. Numer. Meth. Eng.*, 28:1317–1334, 1989.
- [13] A. Eriksson. On the numerical treatment of the stability properties of elastic equilibrium solutions. Technical report, Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1990.
- [14] A. Eriksson. On the numerical usage of differentiated tangential stiffness matrices for elastic instability problems. In *Second World Congress on Computational Mechanics*, Stuttgart, 1990.
- [15] J. Bröchner, A. Eriksson, and J. Lundquist, editors. *Byggprojektet som dataförädling. Processaspekter på informationsstrukturer.* Inst. Brobyggnad, KTH, Stockholm, 1990.
- [16] A. Eriksson. Ändamålsenliga datastrukturer. In J. Bröchner, A. Eriksson, and J. Lundquist, editors, *Byggprojektet som dataförädling. Processaspekter på informationsstrukturer.* Inst. Brobyggnad, KTH, Stockholm, 1990.
- [17] A. Eriksson. On the usage of one-step O. D. E. solvers as predictors for structural equilibrium path evaluations. In R. Vichnevetsky and J.J.H. Miller, editors, *IMACS 91*, pages 339–340, Dublin, 1991.
- [18] A. Eriksson. Derivatives of tangential stiffness matrices for improved equilibrium path predictions. *Int. J. Numer. Meth. Eng.*, 32:1093–1113, 1991.

- [19] A. Eriksson. On a thin shell element for non-linear analysis, based on the isoparametric concept. *Comp. Struct.*, 42:927–939, 1992.
- [20] A. Eriksson. On accurate descriptions for primary and secondary paths in equilibrium problems. *Comp. Struct.*, 44:229–242, 1992.
- [21] A. Eriksson. Fold lines for imperfection analyses at critical equilibrium. In Ch. Hirsch et al., editor, *Numerical Methods in Engineering 92*. Elsevier, Amsterdam, 1992.
- [22] A. Eriksson. On improved predictions for structural equilibrium path evaluations. *Int. J. Numer. Meth. Eng.*, 36:201–220, 1993.
- [23] A. Eriksson and C. Pacoste. On parameter investigations of instabilities in reticulated space frames. In *4th Int. Conf. on Space Structures*, Guildford, 1993.
- [24] A. Eriksson. Cutsets and augmented equilibrium equations for multi-parametric structural analysis models. Technical report, Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1993.
- [25] A. Eriksson. Fold lines for sensitivity analyses in structural instability. *Comput. Methods Appl. Mech. Engrg.*, 114:77–101, 1994.
- [26] A. Eriksson. Generalized path-following for structural criticality. In K. Bell, editor, *NSCM VII, Abstracts*, Trondheim, 1994. Dept. Struct. Engng., The Norwegian Inst. Techn.
- [27] A. Eriksson and C. Pacoste. Investigation of elements for plane frame instabilities. In K. Bell, editor, *NSCM VII, Abstracts*, Trondheim, 1994. Dept. Struct. Engng., The Norwegian Inst. Techn.
- [28] A. Eriksson and R. Kouhia. On step size adjustments in structural continuation problems. *Comp. Struct.*, 55:495–506, 1995.
- [29] C. Pacoste and A. Eriksson. Element behaviour in post-critical plane frame analysis. *Comput. Methods Appl. Mech. Engrg.*, 125:319–343, 1995.
- [30] A. Eriksson. Some aspects of generalized path-following procedures. In *Proceedings NSCM VIII*, Göteborg, 1995.
- [31] A. Eriksson and C. Pacoste. Beam elements in instability problems. In *Proceedings NSCM VIII*, Göteborg, 1995.
- [32] A. Eriksson. A note on the development of efficient simple finite elements. Technical Report 1996:16, Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1996.
- [33] A. Eriksson and C. Pacoste. Parametric dependence in structural response. In *Proceedings NSCM IX*, Lyngby, 1996. Invited lecture.
- [34] A. Eriksson. Equilibrium subsets for multi-parametric structural analysis. *Comput. Methods Appl. Mech. Engrg.*, 140:305–327, 1997.
- [35] C. Pacoste and A. Eriksson. Beam elements in instability problems. *Comput. Methods Appl. Mech. Engrg.*, 144:163–197, 1997.
- [36] A. Eriksson and G. Sandberg, editors. *Engineering structures and extreme events — proceedings from a symposium, May 1997*. Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1997.
- [37] A. Eriksson and C. Pacoste. Symbolic derivation of finite elements. In *Proceedings NSCM X*, Tallinn, 1997.
- [38] A. Eriksson. Accurate phenomenon description and parameter sensitivity in structural instability. In *3rd Euromech Solid Mechanics Conference*, Stockholm, 1997.
- [39] A. Eriksson and C. Pacoste. Symbolic software in linear and non-linear FEM development. In *Euromech Colloquium 371*, Karlsruhe, 1997.

- [40] A. Eriksson. Structural instability analyses based on generalised path-following. *Comput. Methods Appl. Mech. Engrg.*, 156:45–74, 1998.
- [41] C. Pacoste and A. Eriksson. Symbolic derivation of accurate and efficient finite elements. In S. Idelsohn, E. Oñate, and E. Dvorkin, editors, *Computational Mechanics. New trends and applications*, Barcelona, 1998. CIMNE.
- [42] A. Eriksson and C. Pacoste. Sensitivity aspects in the critical behaviour of elastic structures: a numerical approach. In S. Idelsohn, E. Oñate, and E. Dvorkin, editors, *Computational Mechanics. New trends and applications*, Barcelona, 1998. CIMNE.
- [43] A. Eriksson and C. Pacoste. Element formulations from symbolic manipulation. In B. H. V. Topping, editor, *Advances in finite element procedures and techniques*, pages 1–13. Civil-Comp Press, Edinburgh, 1998. (Contribution to CST-98).
- [44] A. Eriksson and C. Pacoste, editors. *Proceedings of the NSCM-11: Nordic Seminar on Computational Mechanics*. Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1998.
- [45] A. Zdunek, C. Pacoste, and A. Eriksson. Finite element based incremental-iterative analysis of complex instability behaviour. In A. Eriksson and C. Pacoste, editors, *Proceedings of the NSCM-11: Nordic Seminar on Computational Mechanics*, pages 84–86. Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1998.
- [46] Y. H. Luo and A. Eriksson. Extension of field consistence approach into developing plane stress elements. *Computer Methods in Applied Mechanics and Engineering*, 173:111–134, 1999.
- [47] Y. H. Luo and A. Eriksson. An alternative assumed strain method. *Computer Methods in Applied Mechanics and Engineering*, 178:23–37, 1999.
- [48] A. Eriksson and C. Pacoste. Symbolic software tools in the development of efficient finite elements. *Comp. Struct.*, 72:579–593, 1999.
- [49] A. Eriksson and C. Pacoste. Systematic parameter investigations in shell instability analyses. In E. M. Croitoro, editor, *Proceedings 1st Canadian conference on nonlinear solid mechanics*, Victoria, B.C., 1999. University of Victoria.
- [50] A. Eriksson, Y.-H. Luo, and C. Pacoste. Computer algebra investigation of equivalence in 4-node plane stress/strain finite elements. In V. G. Ganzha, E. W. Mayr, and E. V. Vorozhtsov, editors, *Computer algebra in scientific computing. CASC '99*, pages 67–80. Springer, Berlin, 1999.
- [51] A. Eriksson and Y.-H. Luo. Computer algebra in the derivation of field-consistent finite elements. In *Proceedings ECCM '99*, Munich, 1999. Technische Universität München.
- [52] A. Zdunek, C. Pacoste, and A. Eriksson. Finite element based incremental-iterative analysis of complex instability behaviour. In *Proceedings ECCM '99*, Munich, 1999. Technische Universität München.
- [53] C. Pacoste, A. Eriksson, and Y.-H. Luo. A flat facet three node element for shell analyses — Some theoretical and numerical aspects. Technical Report 1999:20, Dept. Struct. Engng., Royal Inst. Techn., Stockholm, 1999.
- [54] A. Eriksson, C. Pacoste, and A. Zdunek. Numerical analysis of complex instability behaviour using incremental-iterative strategies. *Comput. Methods Appl. Mech. Engrg.*, 179:265–305, 1999.
- [55] A. Eriksson and C. Pacoste. Solution surfaces and generalised paths in non-linear structural mechanics. *Int. J. Struct. Stab. Dyn.*, 1:1–30, 2001.
- [56] C. Pacoste and A. Eriksson. Stability problems in shell structures – element formulation and numerical techniques. In *Proceedings IASS-IACM 2000*. Chania, 2000. (invited lecture).
- [57] C. Pacoste, A. Eriksson, and A. Zdunek. Parameter dependence in the critical behaviour of shell structures: a numerical approach. In *Proceedings IASS-IACM 2000*. Chania, 2000.

- [58] A. Eriksson and C. Pacoste. Two-dimensional solution sets for parameterised non-linear equilibrium. In *Proceedings IASS-IACM 2000*. Chania, 2000.
- [59] A. Eriksson and C. Pacoste. Non-linear shell instability analyses in a multi-parametric setting. In *CD-Rom Proceedings ECCOMAS 2000*. Barcelona, 2000. (invited lecture).
- [60] C. Pacoste, J.-M-Battini, and A. Eriksson. Parameterisation of rotations in co-rotational elements. In *Proceedings Euromech 2000*, Metz, 2000.
- [61] A. Eriksson and C. Pacoste. Shell instability phenomena studied by multi-parametric non-linear analyses. In W.A. Wall, K.-U. Bletzinger, and K. Schweizerhof, editors, *Proceedings 'Trends in Computational Structural Mechanics'*. CIMNE, Barcelona, 2001. (invited lecture).
- [62] A. Eriksson and C. Pacoste. Element formulation and numerical techniques for stability problems in shells. *Comput. Methods Appl. Mech. Engrg.*, 191:3775–3810, 2002.
- [63] A. Eriksson. Some aspects of shell instability analyses. In E. M. Croitoro, editor, *2nd Can. Conf. on Nonlinear Sol. Mech.*, pages 485–494, Vancouver, B.C., 2002. Simon Fraser University.
- [64] J.-M. Battini, C. Pacoste, and A. Eriksson. Improved minimal augmentation procedure for the direct computation of critical points. *Comput. Methods Appl. Mech. Engrg.*, 192:2169–2185, 2003.
- [65] A. Eriksson. Temporal finite element descriptions in structural dynamics. In B. H. V. Topping and C. A. Mota Soares, editors, *Proc. 7th Int. Conf. Comp. Struct. Techn.*, Stirling, U.K., 2004. Civil-Comp Press.
- [66] D. Ljubimova, A. Eriksson, and S. Bauer. On the numerical models of eye accommodation. In *Poster presentation at ESB2004*, Eindhoven, 2004.
- [67] A. Eriksson, J.Måansson, and G. Tibert, editors. *NSCM-17: Proceedings of the 17th Nordic Seminar on Computational Mechanics*. KTH Mechanics, Stockholm, 2004.
- [68] D. Ljubimova, A. Eriksson, and S. Bauer. Numerical study of the influence of vitreous support. *Acta Bioeng. Biomech.*, 7:3–15, 2005.
- [69] H. Xiao and A. Eriksson. Co-rotational thin membrane elements. In E. Ramm, W. A. Wall, K.-U. Bletzinger, and M. Bischoff, editors, *Proc. 5th Int. Conf. Computation of Shell and Spatial Structures*, Salzburg, 2005.
- [70] A. Eriksson. Analysis methodology based on temporal FEM for bio-mechanical simulations. In M. Ursino, C. A. Brebbia, G. Pontrelli, and E. Magosso, editors, *Modelling in Medicine and Biology VI*, Southampton, 2005. WIT Press.
- [71] V. Ekstrand, H. Wiksell, I. Schulz, B. Sandstedt, S. Rotstein, and A. Eriksson. Influence of electrical and thermal properties on RF ablation of breast cancer: is the tumour preferentially heated? *BioMedical Journal Online*, 4:41, 2005.
- [72] A. Eriksson. Optimization for targeted movements. In C. A. Mota Soares, editor, *Proc. III Eur. Conf. Comp. Mech.: Solids, structures and coupled problems in engineering*, Lissabon, 2006.
- [73] A. Eriksson. Criteria for optimality in movements. *J. Biomech.*, 39 (suppl 1):S54, 2006.
- [74] A. Eriksson. Numerical simulations of skeletal muscle mechanics. In B. H. V. Topping, G. Montero, and R. Montenegro, editors, *Proc. 8th conf. Comp. Struct. Techn.*, Gran Canaria, 2006. (special invited lecture).
- [75] A. Eriksson and A. G. Tibert. Redundant and force-differentiated systems in engineering and nature. *Comput. Methods Appl. Mech. Engrg.*, 195:5437–5453, 2006.
- [76] M. Kaphle and A. Eriksson. Optimal simulations for human and robotic movements. In O. Dahlblom, L. Fuchs, K. Persson, M. Ristinmaa, G. Sandberg, and I. Svensson, editors, *Proc. NSCM-19*, Lund, 2006.

- [77] A. Eriksson. Temporal finite elements for target control dynamics of mechanisms. *Comp. Struct.*, 85:1399–1408, 2007.
- [78] A. Eriksson, K. Marti, M. Müller-Hannemann, B. H. V. Topping, and C. A. Mota-Soares. Engineering computational technology. *Advances in Engineering Software*, 38(11-12):723–725, 2007.
- [79] A. Suleman, A. Eriksson, B. H. V. Topping, and C. A. Mota-Soares. Computational structures technology. *Computers and Structures*, 85(17-18):1281–1283, 2007.
- [80] A. Eriksson. Optimal simulations of musculoskeletal posture and movement. *Computer and Experimental Simulations in Engineering and Science*, 1:39–56, 2008.
- [81] M. Kaphle and A. Eriksson. Optimality in forward dynamics simulations. *J. Biomech.*, 41:1213–1221, 2008.
- [82] N. Kosterina, H. Westerblad, J Lännergren, and A. Eriksson. Muscular force production after concentric contraction. *J. Biomech.*, 41:2422–2429, 2008.
- [83] A. Eriksson. Optimization techniques in human movement analysis. In M. Papadrakakis and B.H.V. Topping, editors, *Trends in engineering computational technology*. Saxe-Coburg Publications, 2008.
- [84] A. Eriksson. Optimization in target movement simulations. *Comput. Methods Appl. Mech. Engrg.*, 197:4207–4215, 2008.
- [85] D. Y. Ljubimova, A. Eriksson, and S. Bauer. Aspects of eye accommodation evaluated by finite elements. *Biomechanics and Modeling in Mechanobiology*, 7:139–150, 2008.
- [86] L. Yang, F. Duan, and A. Eriksson. Analysis of the optimal design strategy of a magnetorheological smart structure. *Smart Materials and Structures*, 17, 2008. article 15047.
- [87] N. Kosterina, H. Westerblad, and A. Eriksson. Mechanical work as predictor of force enhancement and force depression. *J. Biomech.*, 42:1628–1634, 2009.
- [88] A. Eriksson and A. Nordmark. Temporal finite element formulation of optimal control in mechanisms. *Comput. Methods Appl. Mech. Engrg.*, 199:1783–1792, 2010.
- [89] A. Eriksson and S. Faroughi. Quasi-static inflation simulations based on a co-rotational triangular space membrane element. *Int. J. Struct. Stab. Dyn.*, 2010. (submitted).
- [90] R. Pettersson, A. Nordmark, and A. Eriksson. Free-time optimization of targeted movements based on temporal FE approximation. In *Proc. CST2010*, Valencia, 2010.
- [91] A. Eriksson and G. Tibert, editors. *Proceedings of NSCM-23: the 23rd Nordic Seminar on Computational Mechanics*. KTH Engineering Sciences, Stockholm, 2010.
- [92] S. Dalil Safaei, A. Eriksson, and G. Tibert. Stiffness visualization for tensegrity structures. In A. Eriksson and G. Tibert, editors, *Proceedings of NSCM-23: the 23rd Nordic Seminar on Computational Mechanics*, KTH, Stockholm, 2010.
- [93] K. Manda, L. Ryd, and A. Eriksson. Finite element simulations of a focal knee resurfacing implant applied to localized cartilage defects in a sheep model. *J. Biomech.*, 44:794–801, 2011.
- [94] A. Eriksson and K. Svanberg. Optimization in simulations of human movement planning. *Int. J. Numer. Meth. Eng.*, 87:1127–1147, 2011.
- [95] A. Eriksson and A. Nordmark. Activation dynamics in the optimization of targeted movements. *Comp. Struct.*, 89:968–976, 2011.
- [96] S. Dalil Safaei, A. Eriksson, and G. Tibert. Application of flexibility analysis for design of tensegrity structures. In *Proc. Structural Engineering World Congress*, Como, Italy, 2011.

- [97] A. Eriksson. Quasi-static simulations of thin space membranes, aiming at stability analyses of balloon-like structures. In M. Papadakakis, N.D. Lagaros, and M. Fragiadakis, editors, *Proc. Compdyn 2011*, Corfu, Greece, 2011.
- [98] N. Kosterina, H. Westerblad, and A. Eriksson. History effect and timing of force production introduced in a skeletal muscle model. *Biomechanics and Modeling in Mechanobiology*, 2011. (doi: 10.1007/s10237-011-0364-5).
- [99] S. Dalil Safaei, A. Eriksson, and G. Tibert. Sensitivity analysis of tensegrity booms due to member loss. In *Proc. 24th Nordic seminar on computational mechanics*, Helsinki, Finland, 2011.
- [100] A. Eriksson and A. Nordmark. Instability of thin hyper-elastic space membranes under pressure loads. In *Proceedings of TCCM-2011*, Padova, Italy, 2011.
- [101] K. Manda and A. Eriksson. Time dependent behavior of cartilages surrounding a metal implant for full thickness cartilage defects of various sizes: a finite element study. *Biomechanics and Modeling in Mechanobiology*, 11:731–742, 2012.
- [102] A. Bissal, G. Engdahl, A. Eriksson, E. Salinas, and J. Magnusson. On the design of ultra-fast electro-mechanical actuators: A comprehensive multi-disciplinary simulation model. In *Proceedings of ICEF'2012*, Dalian, China, 2012.
- [103] R. Pettersson, A. Nordmark, and A. Eriksson. Optimization of multiple phase human movements. *Multibody System Dynamics*, 2012. (submitted).
- [104] A. Eriksson. Optimization of power input in simulated cross-country skiing. *Structural and Multidisciplinary Optimization*, 2012. (submitted).
- [105] S. Dalil Safaei, A. Eriksson, and G. Tibert. Improving bending stiffness of tensegrity booms. *Int. J. Space Struct.*, 2012. (accepted).
- [106] M. Swarén, M. Therell, A. Eriksson, and H.-C. Holmberg. Cross-country ski poles: Introduction of a shaft strength index. In *Proceedings of ICSNS 2012*, Vuokatti, Finland, 2012.
- [107] M. Swarén, A. Eriksson, and H.-C. Holmberg. Treadmill simulation of olympic cross country ski track. In *Proceedings of ICSNS 2012*, Vuokatti, Finland, 2012.
- [108] A. Eriksson. Numerical modeling of thin pressurized membranes. In *CST-2012, Proceedings book*, Dubrovnik, 2012.
- [109] N. Kosterina, R. Wang, A. Eriksson, and E.M. Gutierrez-Farewik. Force enhancement and force depression in a modified muscle model used for muscle activation prediction. *J. Biomech.*, 2012. (submitted).
- [110] A. Eriksson and A. Nordmark. Instability of hyper-elastic balloon-shaped space membranes under pressure loads. *Comput. Methods Appl. Mech. Engrg.*, 237–240:118–129, 2012.
- [111] S. Dalil Safaei, A. Eriksson, and G. Tibert. Optimum pre-stress design for frequency requirements of tensegrity structures. In *Proceedings 10th WCCM*, Sao Paolo, Brazil, 2012.
- [112] A. Eriksson. Multi-parametric stability investigations for pressurized thin membranes. In J. Eberhardsteiner et.al., editor, *European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012)*, Vienna, 2012.