Eduardo N. Dvorkin, Ph.D.

CURRICULUM VITAE

PERSONAL DATA

Date of birth: 3/8/51
Place of birth: Buenos Aires, Argentina
Office address: Av. Pueyrredón 2130 5to "A", Buenos Aires, Argentina.
Phone: +54 11 4807 8348
Email: edvorkin@simytec.com – edvorkin@fi.uba.ar

EDUCATION

Doctor of Philosophy in Mechanical Engineering
Massachusetts Institute of Technology (1984)
Tesis: "On Nonlinear Finite Element Analysis of Shell Structures"

Master of Science in Mechanical Engineering
Massachusetts Institute of Technology (1982)
Tesis: "Nonlinear Thermo-Elastic Analysis of Shells Using the Finite Element Method"

Ingeniero Electromecánico or. Mecánica
Universidad de Buenos Aires (1974)

AWARDS

Award "Houssay Trajectory 2013", Ministry of Science, Technology and Innovation of Argentina. Area. Engineering, Architecture and Informatics (2014).

Argentine Association for Computational Mechanics, Award of the Teaching, Professional and Scientific Trajectories, 2010.

Edward Laroque Tinker Visiting Professor – Stanford University – Winter Term 2009-2010.

Emerald Literari Network, Highly Commended Award 2008 for the paper: R.G. Toscano and E.N. Dvorkin, "A shell element for finite strain analyses. Hyperelastic material models", Eng. Comput., Vol.24, pp. 514-535, 2007.

KONEX FOUNDATION award in Science and Technology for the decade 1993 - 2002. Merit Diploma in the field: Technological Development, 2003.

Fellow of the International Association for Computational Mechanics. (1998)

Fellow of the Argentine Academy of Sciences. (1996 - ...)

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KONEX FOUNDATION award in Science and Technology for the decade 1983 - 1992. Merit Diploma in the field: Electronic Engineering and Communications Engineering and Computational Engineering, 1993.

ACADEMIC ACTIVITY

Scientific Committees

Member of the Technology Advisory Commission. Argentine National Council for Science and Technology (CONICET) (2012)
Member of the directory board of the Argentine Afency for Science and Technology (2009-2010)

Member of the selection board of the Tenaris Award for the Argentine Technology Development (2005, 2006, 2007, 2008 and 2009)

Member of the International Advisory Board of the McGill Metals Processing Centre, McGill University, Montreal, Canada (2001 - …)

Member of the Scientific Committee of the European Scientific Association for material Forming (ESAFORM) (2007-2012)

Member of the Board for Qualification and Promotions. Argentine National Council for Science and Technology (CONICET) (2004)

Member of the Advisory Board for issuing The National Plan for Technology Science and Production Innovation, Argentina. (2001)

Member of the Advisory Board for Agricultural Sciences, Engineering and Materials of the National Council for Sciences and Technology, Argentina. (2000)

Member of the Council for Scientific Policy of the Government of the City of Buenos Aires. (1998 - 1999)

Member of the Council for the Promotion of Scientific and Technological Research, Universidad de Buenos Aires. (1994 - 1997)

Member of the Technology Committee of the University of Buenos Aires (1996)

Member of the Doctoral Studies Committee, School of Engineering, Universidad de Buenos Aires. (1994 - 1998)

Member of the General Council of the International Association for Computational Mechanics. (1990 - ..)

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Member of the Advisory Council of the Centro Internacional de Métodos Numéricos en Ingeniería, E.T.S. de Ingenieros de Caminos, Canales y Puertos, Universidad Politécnica de Catalunya, Barcelona, Spain. (1987 - ...)

Editorial Boards of Scientific Journals

Member of the Editorial Board of the journal "International Journal of Forming Processe", ESAFORM, printed by Hèrmes, France. (1998 - 2012)

Member of the Editorial Board of the journal "Computers & Structures", printed by Pergamon Press, U.K. (1996 - ...)

Member of the Editorial Board of "IACM Expressions", Bulletin of the International Association of Computational Mechanics. (1996 - ...) Subject Editor for Applied Mechanics of the journal "Latin American Applied Research", Bahía Blanca, Argentina. (1994 - ...)

Member of the Editorial Board of the journal "Engineering Computations", printed by MCB University Press, U.K. (1988 - ...)

Member of the Editorial Board of the journal "Revista Internacional de Métodos Numéricos para el Cálculo y Diseño en Ingeniería", printed in Barcelona, Spain. (1987 - ...)

Member of the Editorial Board of the journal "Mechanics", The American Academy of Mechanics. (1998 - 2002)

Reviewer for the "International Journal for Numerical Methods in Engineering" and for "Computer Methods in Applied Mechanics and Engineering".

Teaching

Stanford University, Department of Mechanical Engineering.
Visiting Professor. Development of the course: "ME-411 Advance Computationsl Solid Mechanics" (Winter Term 2010).

Engineering School. Universidad de Buenos Aires.
(1995-…)

Full Professor of Computational Mechanics (Part-time), Department of Mechanical Engineering. (1995 - ...)

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Universidad de La Plata, Engineering School.
Visiting Professor.
(2003)

Universidad de Buenos Aires, Science School.
Visiting Professor.
(2003)

Universidad de Buenos Aires, Science School.
Visiting Professor.
(1991 - 1993)

Universidad de Buenos Aires, Institute for Materials and Structures, Engineering School.
Full Professor of Solid Mechanics (Part-time).
(1985-1990)

"Centro Internacional de Métodos Numéricos en Ingeniería", E.T.S. de Ingenieros de Caminos, Canales y Puertos, Universidad Politécnica de Catalunya, Barcelona, Spain. Visiting Professor.
(January to April 1987)

Seminar at the Workshop of Applied Mathematics for Industry, organized by the University of Mar del Plata, Argentina.
Topic: "Modelling of Metal Forming Processes using the Finite Element Method"
August, 1996.

Seminar at the Institut für Statik und Dynamik der Luft-und Raumfahrtkonstruktionen, University of Stuttgart, Germany.
Topic: "Modelling of Metal Forming Operations"
November 10th., 1995.

Lecture on "Modelling of Metal Forming Operations", Fall Solid Mechanics Seminar Series, Brown University, Providence, Rhode Island, U.S.A.,
October 9th., 1992.

Invited lecturer in the course "Nonlinear Analysis of Shells Using Finite Elements", International Centre for Mechanical Sciences (CISM), Udine, Italy.
(June 24-28, 1991)

Seminars at the Institut für Statik und Dynamik der Luft-und Raumfahrtkonstruktionen, University of Stuttgart, Germany.
Topic: "Finite Elements Based on Mixed Interpolation of Tensorial Components"
(19/11/90-23/11/90)

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CURRICULUM VITAE

Lecturer in the course “Methods for Nonlinear Finite Element Analysis”, Center of Advanced Engineering Study, M.I.T.
(1983 and 1984)

Research Assistant, Department of Mechanical Engineering, M.I.T.
(1981 - 1983)

Teaching Assistant, Engineering School, Universidad de Buenos Aires.
(1972 - 1977)

Evaluations

Member of the Evaluation Committee for the 2015 version of the Houssay, Houssay Trajectory and Jorge Sábato Awards in the fields of Engineering, Architecture and Informatics (2016).

Member of the evaluation board for the award in Mechanical Engineering “Academy of Sciences of Buenos Aires”. Medal “Ing. Pedro Vicien”, Buenos Aires Academy of Sciences (2013)

Member of the evaluation board for the award in Mechanical Engineering “Academy of Sciences of Buenos Aires”. Medal “Ing. Pedro Vicien”, Buenos Aires Academy of Sciences (2000)

Member of the evaluation board for the award “Academy of Sciences of Buenos Aires Award, year 2000”, Buenos Aires Academy of Sciences (2000)

Member of the evaluation board for the award “Oreste Moretto Award” in Geothecnical Engineering, Argentine Academy of Sciences (1999)

Member of the evaluation board of the “Prize for New Engineering Developments”, National Agency of Science and Technology and Argentine Association of Engineers (1998).

President of the committee for the evaluation of projects, National Agency of Science and Technology, Argentina, area of Mechanical Technology and Materials (1998)

Member of the evaluation board for delivering the “Luis María Machado Award” in Computational Mechanics, Argentine Academy of Sciences (1997)

Examinator in Doctoral Theses and Faculty selection contests at the Universidad de Buenos Aires, Universidad de Córdoba (Argentina), Universidad del Litoral (Argentina), Universidad de La Plata (Argentina) and Universidad Politécnica de Catalunya (Spain)

Member of the Scientific Committee of the Applied Mathematics Program of the FONDAP - Scientific and Technological Research Commission of Chile (1997 -....)

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Theses supervision

Undergraduate theses

1. Undergraduate Thesis in Physics. E.Petöcz, "Modeling of metal forming processes using the finite element method" (in Spanish), Universidad de Buenos Aires, Advisor: E.N.Dvorkin, 1991.

2. Undergraduate Thesis in Mechanical Engineering. M. Zielonka, "Modeling of localization of plastic deformation in solids" (in Spanish), Universidad de Buenos Aires, Advisor: E.N. Dvorkin, 1997.

3. Undergraduate Thesis in Physics. M. Koslowski, "Modeling of the convection-diffusion equation with the finite element method" (in Spanish), Universidad de Buenos Aires, Advisors: E.N. Dvorkin and M.B. Goldschmit, 1997.

4. Undergraduate Thesis in Mechanical Engineering. M. Gonzalez, "An inverse model for the estimation of the steel-mold heat transfer coefficient in a continuous casting installation for steel slabs" (in Spanish), Universidad de Buenos Aires, Advisors: E.N. Dvorkin, M.B. Goldschmit and E.Fernández Berdaguer, 2002.

5. Undergraduate Thesis in Mechanical Engineering. M. Vecchio, "Finite element analysis of flat steel hot rolling strategies" (in Spanish), Universidad de Buenos Aires, Advisors: E.N. Dvorkin and M.A. Cavaliere, 2003.

6. Undergraduate Thesis in Mechanical Engineering. S. Grittini, "Finite element analysis of insulated marine pipelines" (in Spanish), Universidad de Buenos Aires, Advisors: E.N. Dvorkin and R.G.Toscano, 2004.

7. Undergraduate Thesis in Mechanical Engineering. E. Della Nave, "Nonlinear dymanics of beams under torsion, bending and axial loads. Finite element analysis" (in Spanish), Universidad de Buenos Aires, Advisor: E.N. Dvorkin, 2009.

8. Undergraduate Thesis in Mechanical Engineering. A. Ferrari, "Computational modeling of impact problems" (in Spanish), Universidad de Buenos Aires, Advisor: E.N. Dvorkin, 2010.

9. *Undergraduate Thesis in Mechanical Engineering*. L. Buglioni, "Numerical modeling of lubrication problems. Fluid-structure interaction" (in Spanish) Universidad de Buenos Aires, Advisor: E.N. Dvorkin, 2010.

10. *Undergraduate Thesis in Mechanical Engineering. P. Gutheim, "Modelado de Problemas Dinámicos en Estructuras de Vigas. Análisis de Métodos de Integración Temporal" (in Spanish) Universidad de Buenos Aires, Advisor: E.N. Dvorkin, 2011.*

11. *Undergraduate Professional Project in Mechanical Engineering. D. Schupbach, "Estensión de vida de un Puente grúa de acería" (in Spanish) Universidad de Buenos Aires, Advisor: E.N. Dvorkin, 2012.*

12. *Undergraduate Thesis in Materials Engineering. A. Pinio, "Integración de la ecuación de convección - difusión utilizando el método de elementos finitos" (in Spanish) Universidad Nacional de General San Martín. Instituto de Tecnología Prof. Jorge Sábato, Advisor: E.N. Dvorkin, 2014.*
13. *Undergraduate thesis in Industrial Engineering. P. Inda, "Ingeniería de nuevos procesos y nuevos productos. La simulación computacional", Universidad de Buenos Aires, Director: E.N. Dvorkin, 2015.*

Graduate theses (Master)

1. Master Thesis in Numerical Methods for Engineering (web version). R. Toscano, "Thermo-mechanical modeling of the continuous casting of steel slabs" (in Spanish), Universidad Politécnica de Catalunya (Spain), Directors: E.N. Dvorkin and E. Oñate, 2002.

2. Master Thesis in Numerical Simulation and Control. V. Vampa, "Improvements in the membrane behavior of the MITC4 shell element" (in Spanish), Universidad de Buenos Aires, Director: E.N. Dvorkin, 2004.

3. Master Thesis in Numerical Simulation and Control. J. Pereiras, "Modeling of oil tube thread connections with finite elasto-plastic strains" (in Spanish), Universidad de Buenos Aires, Director: E.N. Dvorkin and R. Toscano, 2006.

4. Master Thesis in Numerical Simulation and Control. H. Logarzo, "Aplicación de métodos numéricos para el análisis de la respuesta de estructuras satelitales frente a excitaciones aleatorias", Universidad de Buenos Aires, Director: E.N. Dvorkin, 2015.

5. Master Thesis in Numerical Simulation and Control. F. Mercado Navarro, "Frecuencias naturales del elemento de cáscara MITC4 en materiales compuestos". Universidad de Buenos Aires, Directors: E.N. Dvorkin y R. Toscano, 2016.

Graduate theses (Doctoral)

1. Doctoral Thesis in Chemical Engineering. M.B. Goldschmit, "Modeling of turbulent flows. Applications to the continuous casting of steel" (in Spanish), Universidad del Litoral, Directors: S.R. Idelsohn and E.N. Dvorkin, 1996.

2. Doctoral Thesis in Engineering. M.A. Cavaliere, "Finite element modeling of bulk metal forming" (in Spanish), Universidad de Buenos Aires, Director: E.N. Dvorkin, 2004.

3. Doctoral Thesis in Engineering. D. Demarco. “An Eulerian formulation for modeling stationary finite strain elastic deformation processes” (in Spanish), Universidad de Buenos Aires, Director: E.N. Dvorkin, 2006.

4. Doctoral Thesis in Engineering. R. Toscano. “Collapse and post-collapse behavior of steel pipes under external pressure and bending. Application to deep water pipelines”, Universidad de Buenos Aires, Director: E.N. Dvorkin, 2009.

5. *Doctoral thesis in Engineering.* S. D’hers, “On localization modeling for ductile materials”, Universidad de Buenos Aires, Director: E.N. Dvorkin, 2010.
6. *Doctoral thesis in Biological Sciences.* J. Taborda, “Estructura y función cráneodentaria: un acercamiento a la paleobiología de los aetosaurios sudamericanos (Archosauria: Pseudosuchia)”, Universidad de Buenos Aires, Directors: J. Desojo and E.N. Dvorkin, 2016.

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PUBLICATIONS

	Total	Since 2015
Citations	5767	1261
h-Index	29	14
I10-Index	51	19

(From Google Scholar January 2020)

Books

1. E.N. Dvorkin and M.B. Goldschmit, *Nonlinear Continua*, Springer, Berlin, 2005 (ISBN: 3540249850)
2. E.N. Dvorkin and R.G. Toscano, *Finite Element Analysis of the Collapse and Post-Collapse Behavior of Steel Pipes: Applications to the Oil Industry,* Springer, Heidelberg, 2013 (ISBN: 9783642373602)
3. E.N. Dvorkin, *¿Qué ciencia quiere el país? Los estilos tecnológicos y los proyectos nacionales*, Editorial Colihue, 2017.

Publications in refereed journals

1. J.P. Canal, A. Micuzzi, H. Logarzo, A. Terlisky, R. Toscano and E. Dvorkin, "On the finite element modeling of COPVs", Computers & Structures, 220 (2019) 1–13
2. E. Della Nave and E. Dvorkin, "On the modeling of oil well drilling processes", *Eng. Comput.*, Vol. 32, pp.387-405, 2015.
3. R. Toscano and E. Dvorkin, "Collapse of steel pipes under external pressure and axial tension", *Journal of Pipeline Engineering*, Vol. 10, pp. 213-214, December 2011.
4. S. D'hers and E.N. Dvorkin, "On the modeling of shear bands formation in J2 materials with damage evolution", *Eng. Comput.*, Vol. 28, pp. 130-153, 2011.
5. S. D'hers and E.N. Dvorkin, "Modeling shear bands in J2 plasticity using a two-scale formulation via embedded strong discontinuity modes", *Int. J. Numerical Methods in Engng.*, Vol. 77, pp.1015-1043, 2009.

6. R.G. Toscano, Luciano O. Mantovano, Pablo M. Amenta, Roberto F. Charreau, Daniel H. Johnson, Andrea P. Assanelli and Eduardo N. Dvorkin, “Collapse arrestors for deepwater pipelines. Cross-over mechanisms”, *Computers & Structures*, Vol. 86, pp. 728-743, 2008.

7. R.G. Toscano and E.N. Dvorkin, “A shell element for finite strain analyses. Hyperelastic material models”, *Eng. Comput.*, Vol.24, pp. 514-535, 2007.

8. D.A. Berazategui, M.A. Cavaliere, L. Montelatici and E.N. Dvorkin "On the modeling of complex 3D bulk metal forming processes via the pseudo-concentrations technique. Application to the simulation of the Mannesmann piercing process", *Int. J. Numerical Methods in Engng.*, Vol.65, pp.1113-1144, 2006.

9. D.Demarco and E.N.Dvorkin, “An Eulerian finite element formulation for modelling stationary finite strain elastic deformation processes”, *Int. J. Numerical Methods in Engng.*, Vol.62, pp.1038-1063, 2005.

10. R.G.Toscano, M.Gonzalez and E.N.Dvorkin, “Validation of a finite element model that simulates the behavior of steel pipes under external pressure”, *The Journal of Pipeline Integrity*, Vol.2, pp.74-84, 2003.

11. E.N.Dvorkin and R.G.Toscano, “A new rigid-viscoplastic model for simulating thermal strain effects in metal forming proceses”, *Int. J. Numerical Methods in Engng.*, Vol.58, pp.1803-1816, 2003.

12. M. Gonzalez, M.B. Goldschmit, A.P. Assanelli, E. Fernández Berdaguer and E.N. Dvorkin, “Modeling of the solidification process in a continuous casting installation for steel slabs”, *Metallurgical and Materials Transactions*, Vol. 34B, pp. 455-473, 2003.

13. E.N.Dvorkin, M.A.Cavaliere and M.B.Goldschmit, “Finite element models in the steel industry. Part I: simulation of flat product manufacturing processes”, *Computers & Structures*, Vol.81, pp.559-573, 2003.

14. E.N.Dvorkin and R.G.Toscano, “Finite element models in the steel industry. Part II: analyses of tubular products performance”, *Computers & Structures*, Vol.81, pp.575-594, 2003.

15. M.D.Demarco and E.N.Dvorkin, “Modeling of metal forming processes: implementation of an iterative solver in the flow formulation”, *Computers & Structures*, Vol.79, pp.1933-1942, 2001.

16. M.A.Cavaliere, M.B.Goldschmit and E.N.Dvorkin, “Finite element simulation of the steel plates hot rolling process”, *Int. J. Numerical Methods in Engng.*, Vol.52, pp.1411-1430, 2001.

17. E.N.Dvorkin, “On the convergence of incompressible finite element formulations: the Patch Test and the Inf-Sup condition”, *Engng. Computations*, Vol.18, pp.539-556, 2001.

18. M.A.Cavaliere, M.B.Goldschmit and E.N.Dvorkin, “Finite element analysis of steel rolling processes”, *Computers & Structures*, Vol. 79, pp.2075-2089, 2001.

19. A.P.Assanelli, R.G.Toscano, D.H.Johnson and E.N.Dvorkin, “Experimental / numerical analysis of the collapse behavior of steel pipes”, *Engng. Computations*, Vol.17, pp.459-486, 2000.

20. E.N.Dvorkin and A.P.Assanelli, “Implementation and stability analysis of the QMITC-TLH elasto-plastic finite strain (2D) element formulation”, *Computers & Structures*, Vol.75, pp.305-312, 2000.

21. E.N.Dvorkin, M.A.Cavaliere, M.B.Goldschmit and P.M.Amenta, “On the modeling of steel product rolling processes”, *Int.J.Forming Processes* (ESAFORM), Vol.1, pp.211-242, 1998.

22. A.P.Assanelli, K.Xu, F.Benedetto, D.H.Johnson and E.N.Dvorkin, “Numerical / experimental analysis of an API 8-round connection”, ASME, *J. Energy Resources Technology*, Vol.119, pp.81-88, 1997.

23. E.N.Dvorkin, M.B.Goldschmit, M.A.Cavaliere, P.M.Amenta, O.Marini and W.Stroppiana, “2D finite element parametric studies of the flat rolling process”, *J. of Materials Processing Technology*, Vol.68, pp.99-107, 1997.

24. E.N.Dvorkin, “Finite strain elasto-plastic formulations using the method of mixed interpolation of tensorial components”, *Computational Mechanics*, Vol.18, pp.290-301, 1996.

25. E.N.Dvorkin, A.P.Assanelli and R.G.Toscano, “Performance of the QMITC element in 2D elasto-plastic analyses”, *Computers & Structures*, Vol.58, pp.1099-1129, 1996.

26. E.N.Dvorkin, M.A.Cavaliere and M.B.Goldschmit, “A three field element via augmented lagrangian for modelling bulk metal forming processes”, *Computational Mechanics*, Vol.17, pp.2-9, 1995.

27. E.N.Dvorkin, “Nonlinear analysis of shells using the MITC formulation”, Archives Comput. *Meth. Engng.*, Vol.2, pp.1-50, 1995.

28. E.N.Dvorkin, D.Pantuso and E.A.Repetto, “A formulation of the MITC4 shell element for finite strain elasto-plastic analysis”, *Comput. Meth. Appl. Mechs. Engng.*, Vol.125, pp.17-40, 1995.

29. M.B.Goldschmit and E.N.Dvorkin, “On the solution of the steady convection-diffusion equation using quadratic elements: a generalized Galerkin technique also reliable with distorted meshes”, *Engng. Computations*, Vol.11, pp.565-573, 1994.

30. E.N.Dvorkin, D.Pantuso and E.A.Repetto, “A finite element formulation for finite strain elasto-plastic analysis based on mixed interpolation of tensorial components”, *Comput. Meth. Appl. Mechs. Engng.*, Vol.114, pp.34-54, 1994.

31. R.A.Radovitzky and E.N.Dvorkin, "A 3D element for nonlinear analysis of solids", *Communications in Numerical Methods in Engng.*, Vol.10, pp.183-194,1994.

32. E.N.Dvorkin, M.B.Goldschmit, D.Pantuso y E.A.Repetto, "Comentarios sobre algunas herramientas utilizadas en la resolución de problemas no-lineales de mecánica del continuo", *Rev. Int. de Métodos Numéricos para Cálculo y Diseño en Ingeniería*, Vol.10, pp. 47-65, 1994.

33. A.P.Assanelli and E.N.Dvorkin, "Finite element models of OCTG threaded connections", *Computers & Structures*, Vol.47, pp.725-734, 1993.

34. M.B.Goldschmit, J.C.González and E.N.Dvorkin, "On a finite element model for analyzing the liquid slag development during continuous casting of round bars", *Ironmaking & Steelmaking*, The Institute of Materials, U.K., Vol.20, pp.379-385, 1993.

35. E.N.Dvorkin and E.G.Petöcz, "An effective technique for modelling 2d metal forming processes using an Eulerian formulation", *Engng. Computations*, Vol.10, pp.323-336, 1993.

36. E.N.Dvorkin and M.E.Canga, "Incompressible viscoplastic flow analysis using a quadrilateral 2D element based on mixed interpolation of tensorial components", *Communications in Numerical Methods in Engng.*, Vol.9, pp.157-164, 1993.

37. E.N.Dvorkin, A.P.Assanelli, M.A.Cruchaga, M.B.Goldschmit, E.G.Petöcz y R.A.Radovitzky, "Aplicaciones de mecánica computacional en la industria sidero-metalúrgica", *Rev. Int. de Métodos Numéricos para Cálculo y Diseño en Ingeniería*, Vol.8, pp.335-349, 1992. (also published in Mec. Comput., Vol.12, AMCA, 1991).

38. H.J.Antúnez, S.R.Idelsohn and E.N.Dvorkin, "Metal forming analysis by Fourier series expansion and further uses of pseudo-concentrations", *Computers & Structures*, Vol.44, pp.435-451, 1992.

39. E.N.Dvorkin and A.P.Assanelli, "2D finite elements with displacement interpolated embedded localization lines: the analysis of fracture in frictional materials", *Comput. Meth. Appl. Mechs. Engng.*, Vol.90, pp.829-844, 1991.

40. E.N.Dvorkin, A.M.Cuitiño and G.Gioia, "Finite elements with displacement interpolated embedded localization lines insensitive to mesh size and distortions", *Int. J. Numerical Methods in Engng.*, Vol.30, pp.541-564, 1990.

41. A.Cuitiño, G.Gioia y E.N.Dvorkin, "Un modelo de hormigón basado en plasticidad no asociada y fractura", *Rev. Int. de Métodos Numéricos para Cálculo y Diseño en Ingeniería*, Vol.6, pp.159-173, 1990. (Publicado también en Mec. Comput., Vol.7, AMCA, 1989).

42. E.N.Dvorkin, A.Cuitiño and G.Gioia, "A concrete material model based on non-associated plasticity and fracture", *Engng. Computations*, Vol.6, pp.281-294, 1989.

43. E.N.Dvorkin and S.I.Vassolo, "A quadrilateral 2D finite element based on mixed interpolation of tensorial components", *Engng. Computations*, Vol.6, pp.217-224, 1989.

44. E.N.Dvorkin, D.Celentano, A.Cuitiño and G.Gioia, "A Vlasov beam element", *Computers & Structures*, Vol.33, pp.187-196, 1989.

45. E.N.Dvorkin and F.M.Medina, "Finite element models for analyzing the straightening of steel seamless tubes", ASME, *J. Engng. for Industry*, Vol.111, pp.351-355, 1989.

46. E.N.Dvorkin, E.Oñate and J.Oliver, "On a nonlinear formulation for curved Timoshenko beam elements considering large displacement/rotation increments", *Int. J. Numerical Methods in Engng.*, Vol. 26, pp. 1597-1613, 1988.

47. R.J.Torrent, E.N.Dvorkin and A.M.Alvaredo, "A model for work-hardening platicity and failure of concrete under multiaxial stresses", *Cement and Concrete Research*, Vol. 17, pp. 939-950, 1987.

48. E.N.Dvorkin y K.J.Bathe, "Análisis de estructuras laminares generales utilizando el método de elementos finitos", *Rev. Int. de Métodos Numéricos para Cálculo y Diseño en Ingeniería*, Vol.3, pp. 23-52, 1987.

49. K.J.Bathe and E.N.Dvorkin, "A formulation of general shell elements - the use of mixed interpolation of tensorial components", *Int. J. Numerical Methods in Engng.*, Vol. 22, pp.697-722, 1986. (This is an extended version of the work presented in NUMETA, conference that took place at the University College of Swansea, Swansea, Wales, U.K., 1985).

50. P.G.Hodge, K.J.Bathe and E.N.Dvorkin, "Causes and consequences of nonuniqueness in an elastic/perfectly plastic truss", ASME, *J. of Applied Mechanics*, Vol. 53, pp. 235-241, 1986.

51. K.J.Bathe and E.N.Dvorkin, "A four-node plate bending element based on Mindlin / Reissner plate theory and a mixed interpolation", *Int. J. Numerical Methods in Engng.*, Vol. 21, pp. 367-383, 1985.

52. E.N.Dvorkin and K.J.Bathe, "A continuum mechanics based four-node shell element for general nonlinear analysis", *Engng. Computations*, Vol. 1, pp. 77-88, 1984.

53. K.J.Bathe and E.N.Dvorkin, "On the automatic solution of nonlinear finite element equations", *Computers & Structures*, Vol. 17, pp. 871-879, 1983.

54. K.J.Bathe, E.N.Dvorkin and L.W.Ho, "Our discrete Kirchhoff and isoparametric shell elements - an assessment", *Computers & Structures*, Vol.16, pp. 89-98, 1983.

Publications in international and national conference proceedings

Eduardo N. Dvorkin, Ph.D.

CURRICULUM VITAE

1. S. Serebrinsky, M. Sánchez, D. Smilovich, R. Toscano, A. Rosolén, M. Goldschmit, E. Dvorkin y R. Radovitzky, “Desarrollo y validación de un simulador de fracturamiento hidráulico orientado al petróleo y gas”, Mecánica Computacional, Vol. XXXIV, (Eds. S. Giusti, M. pucheta y M. Storti), Córdoba, Argentina, 2016.
2. M. Sánchez, G. Villafines, W. Morris, R. Toscano, J. Hasbani, A. Rosolen, R. Radovitzky and E. Dvorkin, "Numerical simulations and experimental test in the development of hydraulic fracturing processes", VIII South American Congress on Rock Mechanics (2015)
3. S. Tempone, M. Franceschini and E.N. Dvorkin, “Structural models and mechanical tests in the development of a communications satellite”, Proceedings 1st. Pan American Congress on Computational Mechanics (PANACM 2015), (Eds. S. idelsohn el al), pp.1480-1496, Buenos Aires, 2015.
4. R.G. Toscano, M.B.Goldschmit, S.Tempone and E.N.Dvorkin, “Computational modelling: a tool to add economic value to the industrial production”, Proceedings 1st. Pan American Congress on Computational Mechanics (PANACM 2015), (Eds. S. idelsohn el al), pp.1497-1503, Buenos Aires, 2015.
5. José Hasbani, Martín Sánchez, Adrian Rosolen, Gustavo Villafines, Rita Toscano, Raúl Radovitzky and Eduardo Dvorkin, “Sobre el modelado computacional de los procesos de fractura hidráulica”, Simposio de Recursos No Convencionales, IX Congreso de Exploración y Desarrollo de Hidrocarburos, Mendoza Argentina, pp 759-774, noviembre 2014.
6. S. D’hers and E.N. Dvorkin, “Multiscale strain localization modeling in the Gurson-Tvergaard-Needleman plasticity model”, Proceedings COMPLAS 2011, (Eds. E. Oñate and R. Owen), Barcelona, 2011.
7. S. D’hers and E.N. Dvorkin, “Modeling of strain localization for the Gurson-Tvergaard-Needleman plasticity model using strong discontinuity modes”, Mecánica Computacional, Vol. XXIX, (Eds. E.N. Dvorkin, M. Goldschmit and M. Storti), Buenos Aires, Argentina, 2010.
8. R.Toscano and E.N. Dvorkin, “On the reliability of the numerical models for oil industry applications”, Mecánica Computacional, Vol. XXIX, (Eds. E.N. Dvorkin, M. Goldschmit and M. Storti), Buenos Aires, Argentina, 2010.
9. H.Ballesteros, J.Di Cesare, L. Lencina y E.N. Dvorkin, “Modeling of waterhammer events using a Lagrangean formulation”, Mecánica Computacional, Vol. XXVIII, (Eds. C.D. García Bauzá, P.A. Lotito, L.A. Parente and M.J. Vénere), Tandil, Argentina, 2009.
10. R.G. Toscano and E.N.Dvorkin, “On the Reliable Modeling of the Collapse and Post-Collapse Behavior of Pipelines”, Proceedings OMAE 2009 – 28th. International Conference on Offshore Mechanics and Artic Engineering, Honolulu, 2009.
11. R.G. Toscano and E.N. Dvorkin, “A new shell element for elastoplastic finite strain analyses”, Mecánica Computacional, Vol. XXVII, (Eds. A. Cardona, M. Storti and C. Zuppa), San Luis, Argentina, 2008.
12. S. D’hers and E.N. Dvorkin, “Modelinf of strain localization via a two-scale formulation”, Mecánica Computacional, Vol. XXVII, (Eds. A. Cardona, M. Storti and C. Zuppa), San Luis, Argentina, 2008.
13. S. D’hers and E.N. Dvorkin, “Modeling of strain localization in ductile and brittle materials via a two-scale formulation”, Proceeeings 8th World Congress on Computational Mechanics (WCCM8)

and 5th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2008), Venice, 2008.

14. R. Toscano and E. Dvorkin, “A new shell element fo elasto-plastic finite strain analysis. Application to the collapse and post-collapse analysis of marine pipelines”, Proceedings 6th International Conference on Computation of Shell & Spatial Structures, IASS-IACM, Ithaca, NY, 2008.
15. E.N.Dvorkin, “Computational mechanics: Bridging the gap between science and technology”, Proceedings Second Czech-Argentina Biennale Workshop, Buenos Aires, 2007.
16. E.N. Dvorkin, “Modeling of seamless pipes manufacturing processes”, Proceedings COMPLAS IX, Barcelona, 2007.
17. J. Raffo, R.G. Toscano, L. Mantovano and E.N. Dvorkin “Numerical model of UOE steel pipes: forming process and structural behavior”, Mecánica Computacional, Vol. XXVI, pp. 687-704, (Eds. S. Elaskar, E. Pilotta, G. Torres), Córdoba, Argentina, Octubre 2007.
18. R.G. Toscano, J. Raffo, L. Mantovano and E.N. Dvorkin, “Effect of the UOE forming process on the structural behavior of line pipes”, 9th. US National Congress on Computational Mechanics (USNCCM9), San Francisco, July 2007.
19. R.G. Toscano and E.N.Dvorkin, “A shell element for elasto-plastic finite strain analyzes”, 9th. US National Congress on Computational Mechancs (USNCCM9), San Francisco, July 2007.
20. R.G.Toscano and E.N.Dvorkin, “Deepwater pipelines: reliability of finite element models in the prediction of collapse and collapse propagation loads”, 6th International Pipeline Conference, IPC2006-10150, Calgary, Alberta, Canada, September 2006.
21. R.G.Toscano and E.N.Dvorkin, “A shell element for finite strain analyzes. Hyperelastic material models”, Abstracts 7th Wolrld Congress on Computational Mechanics, Los Angeles, July 2006.
22. R.G.Toscano, L.Mantovano, P.Amenta, R.Charreau, D.Johnson, A.Assanelli and E.N.Dvorkin, “Collapse arrestors for deepwater pipelines: finite element models and experimental validations for different cross-over mechanisms”, Abstracts 7th Wolrld Congress on Computational Mechanics, Los Angeles, July 2006.
23. R.G.Toscano, L.O.Mantovano, P. Amenta, R: Charreau, D. Johnson, A. Assanelli and E.N.Dvorkin, " Collapse arrestors for deepwater pipelines: finite element models and experimental validations for different cross-over mechanisms", Proceedings OMAE 2006 – 25th International Conference on Offshore Mechanics and Artic Engineering, Hamburgo, 2006.
24. Rita G. Toscano, Luciano Mantovano, Andrea Assanelli, Pablo Amenta, Daniel Johnson, Roberto Charreau and Eduardo N. Dvorkin, "Collapse arrestors for deepwater pipelines: Identification of crossover mechanisms", Rio Pipeline Conference and Exposition 2005, Technical Papers (paper IBP1021_05), Rio de Janeiro, Brazil, October 2005.
25. D.Berazategui, M.A.Cavaliere, L.Montelatici and E.N.Dvorkin, “On the modeling of the Mannesmann piercing process”, Proceedings Third MIT Conference on Computational Fluid and Solid Mechanics, (Ed. K.-J. Bathe), Elsevier, 2005.
26. E.N.Dvorkin, “Modeling of Metal Forming Processes for the Steel Industry”, Proceedings 3rd. International Conference on the Science and Technology of Steelmaking (ICS 2005), Charlotte, N.C., AIST, 2005.

27. M.A.Cavaliere, M.B.Goldschmit and E.N.Dvorkin, “Implementación del acoplamiento termo-mecánico en procesos de conformado masivo de metales utilizando el método de las pseudo-concentraciones”, Mecánica Computacional, Vol. XXIII, (Ed. G.Buscaglia et al.), 2004.
28. M.A.Cavaliere, G.Gómez, M.Bühler, T. Pérez and E.N.Dvorkin, “Validación experimental del acoplamiento termo-mecánico en procesos de conformado masivo de metales”, Mecánica Computacional, Vol. XXIII, (Ed. G.Buscaglia et al.), 2004.
29. R.G.Toscano, L.Mantovano and E.N.Dvorkin, “On the numerical calculation of collapse and collapse propagation pressure of steel deepwater pipelines under external pressure and bending: experimental verification of the finite-element results”, Proceedings 4th. International Conference on Pipeline Technology, (Ed. R.Denys), Ostend, Belgium, 2004.
30. E.N.Dvorkin, “Steel industry: simulation of production processes and products performance evaluation using finite element models”, Proceedings Second MIT Conference on Computational Fluid and Solid Mechanics, (Ed. K.-J. Bathe), Elsevier, 2003.
31. R.G.Toscano, M.Gonzalez and E.N.Dvorkin, “Experimental validation of a finite element model that simulates the collapse and post-collapse behavior of steel pipes”, Proceedings Second MIT Conference on Computational Fluid and Solid Mechanics, (Ed. K.-J. Bathe), Elsevier, 2003.
32. R.G.Toscano, C.Timms, E.N.Dvorkin and D.DeGeer, “Determination of the collapse and propagation pressure of ultra-deepwater pipelines”, Proceedings OMAE 2003 - 22nd. International Conference on Offshore Mechanics and Artic Engineering, 2003.
33. E.N.Dvorkin, “Finite element models in the steel industry: modeling of production processes”, Proceedings 2nd. Canadian Conference on Nonlinear Solid Mechanics, CanCNSM, (Ed. Elena Croitoro), Vancouver, 2002.
34. M.A.Cavaliere, D.A.Berazategui, M.B.Goldschmit, E.N.Dvorkin, L.Montelatici and D.Wolter, “Modeling of the piercing process: preliminary results”, Proceedings of the 14th. rolling conference, I.A.S., San Nicolás, Argentina, November 2002.
35. L.Montelatici, B.Scarabelli, S.Tosato, D.Wolter and E.N.Dvorkin, “Full-scale experimental determination of the material deformation in a piercing mill on a seamless tubes rolling line”, Proceedings of the 14th. rolling conference, I.A.S., San Nicolás, Argentina, November 2002.
36. R.G.Toscano and E.N.Dvorkin, “Modelado termo-mecánico del proceso de colada continua de planchones de acero”, Mecánica Computacional, Vol. 21, (Eds. S. Idelsohn et al), 2002
37. R.G.Toscano and E.N.Dvorkin, “Collapse and post-collapse behavior of steel pipes”, Fifth World Congress on Computational Mechanics, Vienna, Austria, 2002.
38. E.N.Dvorkin and R.G.Toscano, “Thermo-mechanical modeling of the continuous casting of steel slabs”, Fifth World Congress on Computational Mechanics, Vienna, Austria, 2002.
39. R.G.Toscano, P.M.Amenta and E.N.Dvorkin, “Enhancement of the collapse resistance of tubular products for deep-water pipeline applications”, Proceedings 25th. Offshore Pipeline Technology Conference, IBC, Amsterdam, 2002.
40. E.N.Dvorkin and D.Demarco, “An Eulerian formulation for modeling stationary finite strain elasto-plastic metal forming processes”, Computational Fluid and Solid Mechanics – Proceedings First MIT Conference on Computational Fluid and Solid Mechanics, (Ed. K.-J.Bathe), Elsevier, 2001.

41. E.N.Dvorkin and R.G.Toscano, “Effects of external/internal pressure on the global buckling of pipelines”, Computational Fluid and Solid Mechanics – Proceedings First MIT Conference on Computational Fluid and Solid Mechanics, (Ed. K.-J.Bathe), Elsevier, 2001.
42. M.Gonzalez, E.Fernández Berdaguer, M.B.Goldschmit and E.N.Dvorkin, “Evaluation of the heat transfer coefficients in the mold of a steel slabs continuous cating installation”, Proc. IX Reunión de Trabajo en Procesamiento de la Información y Control, Santa Fe, Septiembre del 2001.
43. M.A.Cavaliere, R.G.Toscano, M.B.Goldschmit y E.N.Dvorkin, “Aplicaciones del método de elementos finitos al estudio de procesos de laminación de chapas”, Mecánica Computacional, Vol.19, (Ed. F.Quintana et al.), 2000.
44. R.G.Toscano, A.P.Assanelli y E.N.Dvorkin, “Colapso y post-colapso de tuberías de conducción submarinas”, Mecánica Computacional, Vol.19, (Ed. F.Quintana et al.), 2000.
45. M.A.Cavaliere, M.B.Goldschmit and E.N.Dvorkin, “On the solution of coupled thermo-mechanical problems via the pseudo-concentrations technique”, Proceedings ECCOMAS 2000 (European Congress on Computational Methods in Applied Sciences and Engineering) - COMPLAS VI (Sixth Int. Conf. on Computational Plasticity), Barcelona, CIMNE, 2000.
46. M.A.Cavaliere, G.Gómez, J.I.Gazzarri, T.Pérez and E.N.Dvorkin, “Experimental procedure for determining true stress - true strain curves for steels in the high temperature range and under controled deformation rate”, Proceedings ECCOMAS 2000 (European Congress on Computational Methods in Applied Sciences and Engineering) - COMPLAS VI (Sixth Int. Conf. on Computational Plasticity), Barcelona, CIMNE, 2000.
47. E.N.Dvorkin, M.A.Cavaliere, M.G.Zielonka and M.B.Goldschmit, “New developments for the modeling of metal rolling processes”, Proceedings European Conference on Computational Mechanics (Ed. W. Wunderlich et al), München-Germany, 1999.
48. E.N.Dvorkin, A.P.Assanelli and M.B.Goldschmit, “Aplicaciones del método de elementos finitos en desarrollos tecnológicos para la industria siderúrgica”, Métodos Numéricos en Ingeniería (Ed. R.Abascal et al), Sevilla-Spain, 1999.
49. E.N.Dvorkin and A.P.Assanelli, “Stability analysis of a finite strain element formulation”, Computational Mechanics – New trends and applications, (Ed. S.Idelsohn et al), CIMNE, 1998.
50. A.P.Assanelli and E.N.Dvorkin, “Selection of an adequate element formulation for modeling OCTG connections”, Computational Mechanics – New trends and applications, (Ed. S.Idelsohn et al), CIMNE, 1998.
51. M.A.Cavaliere, M.B.Goldschmit, P.M.Amenta and E.N.Dvorkin, “Finite element simulation of rolling processes”, Computational Mechanics – New trends and applications, (Ed. S.Idelsohn et al), CIMNE, 1998.
52. A.P.Assanelli, R.G.Toscano and E.N.Dvorkin, “Analysis of the collapse of steel tubes under external pressure”, Computational Mechanics – New trends and applications, (Ed. S.Idelsohn et al), CIMNE, 1998.
53. A.P.Assanelli, R.G.Toscano, D.H.Johnson and E.N.Dvorkin, “Collapse behavior of casings: measurement techniques, numerical analyses and full scale testing”, Proceedings of the 1998 SPE Applied Technology Workshop on Risk Based Design of Well Casing and Tubing, (SPE paper 51314), The Woodlands Texas, 1998.

54. E.N.Dvorkin, M.B.Goldschmit and M.A.Cavaliere, “Computational mechanics applications at SIDERAR steel mill”, 2nd. Int. Congress on Metallurgy and Metals Technology, ABM, São Paolo, Brazil, 1997.
55. M.A.Cavaliere, M.B.Goldschmit and E.N.Dvorkin, “3D modeling of bulk metal forming processes via the flow formulation and the pseudo - concentrations technique”, Proceedings Fifth Int. Conf. on Computational Plasticity, (Ed. D.R.J.Owen et al), CIMNE, 1997
56. E.N.Dvorkin, M.B.Goldschmit, M.A.Cavaliere and P.M.Amenta, “ On the modelling of bulk metal forming processes”, Proc. Second ECCOMAS (European Community on Computational Methods in Applied Sciences) Conference on Num. Methods in Engng., John Wiley & Sons, 1996.
57. M.A.Cavaliere, M.B.Goldschmit, P.M.Amenta y E.N.Dvorkin, “Modelado de procesos de conformado de metales”, Mecánica Computacional, Vol.17, (Ed. G.Etse et al.), 1996.
58. E.N.Dvorkin, “MITC elements for finite strain elasto-plastic analysis”, Proceedings Fourth Int. Conf. on Computational Plasticity, (Ed. D.R.J.Owen et al), Pineridge Press, 1995.
59. E.N.Dvorkin, M.A.Cavaliere and M.B.Goldschmit, “A three field element via augmented Lagrangian for modelling incompressible viscoplastic flows”, Proceedings Fourth Int. Conf. on Computational Plasticity, (Ed. D.R.J.Owen et al), Pineridge Press, 1995.
60. E.N.Dvorkin, “ On finite strain elasto-plastic analysis of shells”, Proceedings Fourth Pan American Congress of Applied Mechanics (PACAM IV), (Ed. L. Godoy et al), Buenos Aires, 1995.
61. E.N.Dvorkin, “On finite strain elasto-plastic analysis using elements based on mixed interpolation of tensorial components”, Mecánica Computacional, Vol.14, (Ed. S. Idelsohn et al.), 1994.
62. A.P.Assanelli, D.H.Johnson y E.N.Dvorkin, “Estudio de uniones tubulares roscadas para aplicaciones petroleras: modelos computacionales y ensayos experimentales”, Mecánica Computacional, Vol.14, (Ed. S. Idelsohn et al.), 1994.
63. E.N.Dvorkin, D.Pantuso and E.A.Repetto, “Finite strain elasto-plastic analysis interpolating Hencky strains and displacements”, Proceedings Third Pan American Congress of Applied Mechanics (PACAM III), San Pablo, Brasil, 1993.
64. A.P.Assanelli, R.A.Radovitzky y E.N.Dvorkin, “Análisis por elementos finitos del colapso en tuberías para aplicaciones en la industria del petróleo”, Mecánica Computacional, Vol.13, (Ed. M.Vénere), 1993.
65. E.N.Dvorkin, D.Pantuso and E.A.Repetto, “2D finite strain elasto-plastic analysis using a quadrilateral element based on mixed interpolation of tensorial components”, Proceedings Int. Congress on Numerical Methods in Engineering and Applied Science, Concepción, Chile, (Ed.H.Alder et al.), CIMNE, Barcelona, 1992.
66. M.B.Goldschmit and E.N.Dvorkin, “A generalized Galerkin technique for solving the stationary convection - diffusion equation. effect of mesh distortions”, Proceedings Int. Congress on Numerical Methods in Engineering and Applied Science, Concepción, Chile, (Ed.H.Alder et al.), CIMNE, Barcelona, 1992.
67. T.Pérez, R.A.Radovitzky and E.N.Dvorkin, “On a thermal model for SAW multipass butt welds”, Proceedings Third Int. Conf. on Trends in Welding Research, Gatlinburg, Tennessee, June 1992, (Ed. S.A.David and J.M.Vitek), ASM International, 1993.

68. E.N.Dvorkin and E.G.Petöcz, “On the modelling of 2d metal forming processes using the flow formulation and the pseudo - concentrations technique”, Proceedings Third Int. Conf. on Computational Plasticity, (Ed. D.R.J.Owen et al.), Pineridge Press, 1992
69. E.N.Dvorkin, “2D finite elements with displacement interpolated embedded localization lines”, Extended Abstracts of Lectures of the Second World Congress on Computational Mechanics, Stuttgart, 1990.
70. E.N.Dvorkin, A.P.Assanelli, A.Cuitiño y G.Gioia, “Elementos finitos en plasticidad, viscoplasticidad y fractura: algunos nuevos desarrollos”, Mecánica Computacional, Vol.9, AMCA, 1989.
71. S.I.Vassolo y E.N.Dvorkin, “Un elemento plano basado en el método de la interpolación mixta de componentes tensoriales”, Mecánica Computacional, Vol.7, AMCA, 1989.
72. E.N.Dvorkin, D.Celentano, A.Cuitiño y G.Gioia, “Un elemento de viga de Vlasov”, Mecánica Computacional, Vol.7, AMCA, 1989.
73. E.N.Dvorkin and A.P.Assanelli, “Elasto - plastic analysis using a quadrilateral 2D element based on mixed interpolation of tensorial components”, Proceedings Second Int. Conf. on Computational Plasticity, (Ed. D.R.J.Owen et al.), Pineridge Press, 1989.
74. M.Medus, E.N.Dvorkin and J.Paiuk, “Optimal temperature distribution in a metal heating furnace”, 6th. IFAC Symposium of Automation in Mining, Mineral and Metal Processing Industries, Buenos Aires, Septiembre 1989.
75. E.N.Dvorkin, G.Fitzsimons y H.Posdena, “Estudio de fisuración central en barras redondas de colada continua”, Proceedings 1er. Congreso de la Asoc. Latinoamericana de Metalurgia y Materiales, Río de Janeiro, Brasil, 1988.
76. E.Oñate, E.N. Dvorkin and J. Oliver, “On the obtention of a complete tangent matrix for geometrically nonlinear analysis of 3D beams and shells”, Proceedings Int. Conference on Engng. Science, Atlanta, U.S.A., 1988.
77. E.N.Dvorkin, R.J.Torrent and A.M.Alvaredo, “A constitutive relation for concrete”, Proceedings 1st. Int. Conf. on Computational Plasticity, (Ed. D.R.J.Owen et al.), Pineridge Press, 1987.
78. L.Liedtke, M.Kojic, E.N.Dvorkin and K.J.Bathe, “A pressure sensitive creep model for crushed rock salt”, Proceedings Conf. Numerical Methods in Geomechanics, Stuttgart, 1986.
79. E.N.Dvorkin, “Sobre la resolución automática de modelos no-lineales de elementos finitos”, Mecánica Computacional, Vol.5, AMCA, 1987.
80. E.N.Dvorkin, “On the formulation of general shell elements using mixed interpolation of tensorial components”, Mecánica Computacional, Vol. 3, AMCA, 1986.
81. K.J.Bathe, A.Chaudhary, E.N.Dvorkin and M.Kojic, “On the solution of nonlinear finite element equations”, Proceedings International Conference of Computer-Aided Analysis and Design of Concrete Structures, Split, Yugoslavia, 1984.
82. K.J.Bathe, A.Chaudhary, E.N.Dvorkin, C.A.Almeida, L.W.Ho and G.Larsson, “Some advances in finite element procedures for nonlinear analysis”, publicado en: Non-Linear Problems (Ed. C.Taylor et al.), Pineridge Press, 1984.
83. E.N.Dvorkin, “Pandeo de pórticos planos con barras de sección variable”, Memorias de las XX Jornadas Sudamericanas de Ingeniería Estructural y VI Simposio Panamericano de Estructuras, Córdoba, Argentina, 1979.

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CURRICULUM VITAE

Chapters in books

1. E.N.Dvorkin, “On nonlinear analysis of shells using finite elements based on mixed interpolation of tensorial components”, publicado en Nonlinear Analysis of Shells by Finite Elements, Ed.F.G.Rammerstorfer), CISM Courses and Lectures No. 328, Springer - Verlag, Wien - New York, 1992.

2. E.Oñate, E.N.Dvorkin, M.Canga and J.Oliver, “On the obtention of the tangent matrix for geometrically nonlinear analysis using continuum based beam/shell finite elements”, publicado en Computational Mechanics of Nonlinear Response of Shells, (Ed. W.B.Kratzig and E.Oñate), Springer-Verlag, 1990.

Other publications

1. E.N.Dvorkin, “Ciencia y tecnología e innovación productiva*”, La Educación del Ingeniero para un Mundo Cambiante*, Academia Nacional de Ciencias Exactas, Físicas y Naturales, Ed. Luis de Vedia, 2014.

2. E.N.Dvorkin, “Sobre la micromecánica de la relación Ciencia-Tecnología-Producción”, *Revista Contacto*, SPE Argentina, September 2012.

3. E.N. Dvorkin, "Convertir ciencia en tecnología: el rol del Estado", *Realidad Económica*, Vol. 261, 2011.

4. E.N. Dvorkin, "Argentina: the development of Science based Technology", Workshop on Science Engineering and Industry: Innovation for Sustainable Development" , *Science Policy Studies and Documents in LAC*, UNESCO, 2011.

5. E.N.Dvorkin, “El estado y la innovación tecnológica”, *Informe Industrial*, N°222, Enero 2010.

6. E.N.Dvorkin, “La ciencia necesaria”, *Revista Encrucijadas* (UBA), N°47, Octubre 2009.

7. M.B.Goldschmot, R.G.Toscano y E.N.Dvorkin, “¿Cómo puede la mecánica computacional ayudar a la siderurgia?”, *Acero Latinoamericano – ILAFA*, N° 514, Mayo-Junio 2009.

8. E.N. Dvorkin, “Computational Mechanics: Bridging the Gap between Science and Technology”, *IACM-Expressions*, N°22, 2008.

9. E.N.Dvorkin, “Computational modelling for the steel industry at CINI”, *IACM-Expressions*, Nº10, 2001.
10. E.N.Dvorkin y M.Rosen, “Sobre la transformación necesaria en las facultades de Ingeniería”, *La Ingeniería*, N°1704, pp. 10-13, Noviembre - Diciembre de 2000.
11. E.N.Dvorkin, “Ciencia, Tecnología y Producción”, *Escenarios Alternativos*, **10**, pp.39-44, 2000.
12. E.N.Dvorkin, “Globalización, Ciencia y Tecnología en la Argentina del 2000”, *Ciencia e Investigación*, Vol. 53, pp.17-21, 2000.
13. E.N.Dvorkin, “Sobre el desarrollo científico tecnológico de la Argentina”, *Boletín Informativo Techint*, N° 297, pp.65-84, 1999.
14. E.N.Dvorkin, “Mecánica Computacional: desarrollos teóricos y aplicaciones industriales”, *Anal. Acad. Nac. Cs, Ex. Fís. y Nat.*, Vol. 49, Buenos Aires, Argentina, 1997.
15. E.N.Dvorkin, “Ingeniería: del tecnólogo intuitivo a la modelización computacional” en ¿Qué es investigar hoy? Reflexiones al borde del nuevo milenio, *Serie Ciencia y Tecnología en la UBA* (Ed. A. Fernández Cirelli), 1997.
16. E.N.Dvorkin y M.B.Goldschmit, “Algunos desarrollos en mecánica computacional realizados en CINI”, *Ciencia y Técnica*, Facultad de Ingeniería, Universidad de Buenos Aires, Junio 1993.
17. E.N.Dvorkin, A.P.Assanelli y M.B.Goldschmit, “Aplicaciones de la mecánica computacional en las industrias sidero-metalúrgicas de la Organización Techint”, *Boletín Informativo Techint*, N° 269, pp.93-112, 1992.
18. E.N.Dvorkin y K.J.Bathe, “El método de elementos finitos en la solución de problemas no-lineales de mecánica del sólido”, *Ciencia y Técnica*, Facultad de Ingeniería, Universidad de Buenos Aires, 1984.

Editorial activity

1. Computational Mechanics – New trends and applications, Proceedings of the 4th International Congress on Computational Mechanics (Eds. S.Idelsohn, E.Oñate and E.N.Dvorkin), CIMNE, 1998.
2. International Journal for Numerical Methods in Engineering, Vol 46, N° 9, (Guest Editors: E.N.Dvorkin, E.Oñate and G.Bugeda), November 1999.
3. Computers and Structures, Vol. 75, N°3, (Guest Editors: F.Armero and E.N.Dvorkin), 2000.
4. Latin American Applied Research - Special issue - R&D in the Steel Industry - Vol.32 N°3 July 2002

5. *Proceedeings of the Mecom del Bicentenario, Mecánica Computacional,* Vol. XXIX (Eds. E.Dvorkin, M. Goldschmit and M. Storti), AMCA, 2010

FELLOWSHIPS

BEGES fellowship of the O.A.S. for graduate studies at M.I.T. (1981 - 1982)

CONFERENCES

Presented papers in numerous Argentine and international conferences.

Invited lecturer in Argentine and international conferences.

Member of the Scientific Committee of the "1st. Pan-Amercan Congress on Computational Mechnics" (PANACM 2015), Buenos Aires, April 2015.

President of the Scientific Committee of Mecom del Bicentenario, co-organized by the Asociación Argentina de Mecánica Computacional and the Asociación Brasileña de Mecánica Computacional, Buenos Aires, noviembre 2010.

Plenary speaker at the IX COMPLAS Conference, Barcelona, 2007.

Plenary Speaker at the Second MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, U.S.A., 2003.

Member of the Advisory Panel of the "Nineth International Conference on Computational Plasticity", Barcelona, Spain, 2007.

Member of the International Advisory Board of the "7th World Congress on Computational Mechanics", Los Angeles, 2006.

Member of the International Advisory Board of the "3rd. International Congress on the Science and Technology of Steelmaking", Charlotte, North Carolina, 2005.

Member of the Scientific Committee of the Third MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, U.S.A., 2005.

Member of the Advisory Panel of the "Fifth International Conference on Computation of Shell and Spatial Structures", Salzburg, Austria, 2005.

Member of the Advisory Panel of the "Seventh International Conference on Computational Plasticity", Barcelona, Spain, 2005.

Member of the Scientific Committee of the Second MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, U.S.A., 2003.

Member of the Computational Solid and Structural Mechanics Scientific Committee, ECCOMAS 2004, 4th. European Congress on Computational Methods in Applied Sciences and Engineering, Jyväskylä, Finland.

Member of the Scientific Committee of MECOM 2002, Santa Fe-Paraná, Argentina, 2002. Plenary Lecturer.

Member of the Advisory Panel of the "Sixth International Conference on Computational Plasticity", Barcelona, Spain, 2003.

Member of the Scientific Committee of the Second European Conference on Computational Mechanics, Cracow, Poland, 2001.

Member of the Scientific Committee of the First MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, U.S.A., 2001.

Member of the Scientific Committee of the ECCOMAS 2000 (European Community on Computational Methods in Applied Science) Congress on Computational Methods in Engineering and Applied Science, to be held together with COMPLAS VI in Barcelona, Spain in 2000.

Member of the Scientific Committee of the 5th International Conference on Computational Structures Technology, to be held in Leuven, Belgium in 2000.

Member of the Scientific Committee of the 4th International Conference on Numerical Simulation of 3-D Metal Forming Processes (NIMISHEET '99), Besançon, France 1999.

Member of the Scientific Advisory Board of the ECCM'99 (First European Conference on Computational Mechanics) organized by the German Association of Computational Mechanics , to be held in Munich in 1999.

Member of the Editorial Board of the "Fourth International Conference on Computational Structures Technology", Ediburgh, Scotland, 1998. Vice-Chairman of the Organizing Committee of the "Fourth World Congress on Computational Mechanics", Buenos Aires, 1998.

Member of the Advisory Panel of the "Fifth International Conference on Computational Plasticity", Barcelona, Spain, 1997.

Member of the Advisory Panel of the "Fourth International Conference on Computational Plasticity", Barcelona, Spain, April 1995.

Member of the Organizing Committee of the Pan American Congress of Applied Mechanics "Pacam IV", Buenos Aires, Argentina, January 1995.

Member of the Advisory Panel the "Third World Congress on Computational Mechanics", Japan, 1994.

Member of the Advisory Panel and Organizing Committee of "MECOM 94 (IV Congreso Argentino de Mecánica Computacional)", Mar del Plata, Argentina, 1994.

Member of the Advisory Panel of the "International Congress on Numerical Methods in Engineering and Applied Sciences", Concepción, Chile, November 1992.

Member of the Advisory Panel of the "First International Conference on Fracture Mechanics of Concrete Structures" organized by Northwestern University, Breckenridge, Colorado, U.S.A., 1992.

Member of the Advisory Panel of the "Third International Conference on Computational Plasticity", Barcelona, Spain, April 1992.

Member of the Advisory Panel and Organizing Committee of "MECOM 91 (XII Congreso Latinoamericano e Ibérico sobre Métodos Computacionales para Ingeniería y III Congreso Argentino de Mecánica Computacional)", Paraná, Argentina, September 1991.

Member of the Advisory Panel of the "International Conference on Computer Aided Training in Science and Technology", Barcelona, Spain, July 1990.

Member of the Advisory Panel of the "Second International Conference on Computational Plasticity", Barcelona, Spain, September 1989.

Member of the Advisory Panel of "MECOM 88 (IX Congreso Latinoamericano e Ibérico sobre Métodos Computacionales para Ingeniería y II Congreso Argentino de Mecánica Computacional)", Córdoba, Argentina, November 1988.

Member of the Advisory Panel of the annual meetings of the "Encuentro Nacional de Investigadores y Usuarios del Método de Elementos Finitos" (ENIEF), Argentina (1986 - ....)

PROFESSIONAL ACTIVITY

Consultant

- Partner of SIM&TEC – Computational Mechanics (2007-…)
  The objectives are: Perform scientific research directed towards the development of computational mechanic tools to be used in technological analyses.
  Develop, using computational mechanic tools, technological research.

- Contract with the Argentine National Council for Science and Technology (CONICET) to organize and start-up the Center for Computer Simulation for Technological Applications at the Scientific – Technological Center at Giol, Buenos Aires (2012-2015)

- Director of the Project Fonarsec ONDAS (Modeling of elastic and electromagnetic waves. Applications: seismic exploration in the oil industry, sonar and radar). Private-Public Consortium formed by: CONICET, INVAP, YPF, SIM&TEC, UNLP, UNRN, UNC, UNSJ) (2012-2015)

- ADINA R&D (Massachusetts, U.S.A.)
  Consultant (1985 - 1990)
  Developments for the ADINA code.

- IBERDUERO S.A. (Madrid, España)
  Consultant for the finite element analysis of damaged concrete dams. Ad-hoc developments in the program ADINA Lectures for the coDictado de un curso para el personal de ingeniería de la empresa. (1987)

- DINATECNICA S.A. (Buenos Aires, Argentina) Consultant for the stress analysis of nuclear expansion joints. (1980)

Eduardo N. Dvorkin, Ph.D.

CURRICULUM VITAE

- **As a staff member**

- TENARIS-SIDERCA
  Center for Industrial Research (CINI) (1988-2007) o General Director of CINI (1995 - 2007) o Head of the Computational Mechanics Department (1988 - 2000).
  Development Division (1985 - 1988)
  Researcher Basic research on the Finite Element Method applied to nonlinear Continuum Mechanics, on numerical modeling of the processes involved in the manufacturing of steel products, and on numerical modeling of steel products service conditions.
  Computational Mechanics consultant for companies of the Techint Organization.

- ADINA R&D (Massachusetts, U.S.A.)
  Research Engineer (1984 - 1985)
  Research and developments in the nonlinear incremental finite element code ADINA.

- ESTABLECIMIENTOS INDUSTRIALES FEBO (Buenos Aires, Argentina)
  Head of the Engineering Department (1980)
  Head of the Mechanical Engineering Group (1977 - 1980)
  Project Engineer (1974 - 1977)
  Design and calculation of steel structures, cranes, nuclear station equipment, etc.

January 2020