

## PERSONAL DATA

**Date of birth:** 29/01/1956

**Place of birth:** Buenos Aires, Argentina

**Office address:** Av. Pueyrredón 2130, 5°A, Buenos Aires, Argentina

**Phone:** 54-11- 4807-8348

**E-mail:** [rtoscano@simytec.com](mailto:rtoscano@simytec.com)

## EDUCATION

### Doctor in Engineering.

Universidad de Buenos Aires (2009).

*Thesis:* "Collapse and post-collapse behavior of steel pipes under external pressure and bending. Application to deep-water pipelines."

*Advisors:* Prof. Eduardo N. Dvorkin (UBA) and Prof. Andrew Palmer (Cambridge University, UK).

### Master in Numerical Methods for Engineering (web version).

Universidad Politécnica de Cataluña (Spain, 2002).

*Thesis:* "Thermo-mechanical modeling of the continuous casting of steel slabs" (in Spanish).

*Advisors:* Prof. Eduardo N. Dvorkin (UBA) and Prof. Eugenio Oñate (CIMNE).

### Railway Engineering.

Universidad de Buenos Aires (1984).

### Civil Engineer.

Universidad de Buenos Aires (1981).

## AWARDS

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.

## ACADEMIC ACTIVITY

### Teaching Experience

1. Assistant professor, Facultad de Ingeniería, Universidad de Buenos Aires, (2009----).
2. Teaching Assistant, Facultad de Ingeniería, Universidad de Buenos Aires, (1980 - 2001).
3. Teaching Assistant, Facultad de Ingeniería, Universidad Católica Argentina, (1992 - 1995).
4. Offshore Pipeline Course, (structural behavior issues), TENARIS, Campana, 2002.

## Theses supervision

### Under-graduate theses

*Undergraduate Thesis in Mechanical Engineering.* S.Grittini, "Análisis por elementos finitos de líneas de conducción submarina aisladas térmicamente", Universidad de Buenos Aires, Advisors: E.N. Dvorkin and R.G.Toscano, 2004.

### Graduate

### theses

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

## PUBLICATIONS

### In refereed journals

1. R.G.Toscano, L.Mantovano, P. Amenta, R. Charreau, D. Johnson, A.Assanelli and E.N.Dvorkin, "Collapse arrestors for deepwater pipelines. Cross-over mechanisms", *Computers&Structures*, Vol. 86, pp 782-743, 2008.
2. R.G.Toscano and E.N.Dvorkin, "A Shell Element for Finite Strain Analyses. Hyperelastic Material Models", *Engineering Computations*, Vol.24, N° 5, pp.514-535, 2007.
3. 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*, 2, pp.74-84, 2003.
4. E.N.Dvorkin and R.G.Toscano, "A new rigid-viscoplastic model for simulating thermal strain effects in metal forming processes", *Int. J. Num. Methods in Engng.*, Vol.58, pp.1803-1816, 2003.
5. 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.
6. 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.
7. 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.

## In conferences

1. R.G.Toscano and E. Dvorkin, "On the reliability of the numerical models for oil industry applications", *Mecánica Computacional*, Vol. XXIX, (Eds. E.N. Dvorkin, M. Goldschmit, M. Storti), pp 7949, Buenos Aires, Argentina, Noviembre 2010.
2. Timms, C., Mantovano, L., Ernst, H.A., Toscano, R., DeGeer, D., Swanek, D., de Souza, M., and Chad, L.C., "On the Influence of the UOE Forming Process on Material Properties and Collapse Pressure of Deepwater Pipelines. Experimental work", Proceedings of the Rio Pipeline Conference and Exposition 2009, IBP\_1382-09, Rio de Janeiro, Septiembre de 2009.
3. R.G.Toscano and E. Dvorkin, " On the reliable modeling of the collapse and post-collapse behavior of pipelines", Proceedings OMAE 2009 –OMAE2009-79764, 28th. International Conference on Offshore Mechanics and Arctic Engineering, Honolulu, Hawaii, 2009.
4. C. Timms, L. Mantovano, H. Ernst, R.G.Toscano, D. DeGeer, D. Swanek, M. de Souza and L. Chad, " The influence of the UOE forming process on material properties and collapse of deepwater pipelines", Proceedings OMAE 2009 –OMAE2009-80179, 28th. International Conference on Offshore Mechanics and Arctic Engineering, Honolulu, Hawaii, 2009.
5. R. Toscano and E.N.Dvorkin, "A new shell element for elasto – plastic finite strain analyzes", *Mecánica Computacional*, Vol. XXVII, (Eds. A. Cardona, M. Storti, C. Zuppa), pp 735, San Luis, Argentina, Noviembre 2008.
6. F. Diaz Telli, M. Pereyra, J.M. Pereiras and R. Toscano," Conexión Premium Diseñada para Operaciones de Altas Cargas", *Jornada del IAPG de Ingeniería de Producción*, Comodoro Rivadavia, Argentina, Agosto 2008.
7. R.G.Toscano, J. Raffo, M. Fritz, R. Silva, Joshua Hines and Chris Timms, "Modeling the UOE Pipe Manufacturing Process", *Proceedings OMAE 2008 –OMAE2008-57605*, 27nd. International Conference on Offshore Mechanics and Arctic Engineering, Estoril, Portugal, 2008.
8. R. Toscano and E.N.Dvorkin, "A new shell element for elasto – plastic finite strain analyzes. Application to the collapse and post-collapse analysis of marine pipelines", *Proceedings 6th International Conference on Computation of Shell & Spatial Structures, Spanning Nano to Mega* (Eds. John F. Abel and J. Robert Cooke), Ithaca, New York, USA, May 2008.
9. F. Diaz Telli, M. Pereyra, J.M. Pereiras and R. Toscano,"Nueva conexión Premium de varillas de bombeo diseñada para aplicaciones de altas cargas", *Jornadas Técnicas Comahue 2008*, Neuquén, Argentina, May 2008.
10. F. Diaz Telli, M. Pereyra, J.M. Pereiras and R. Toscano, "New Sucker Rod Connection Designed for High Loads Applications", *2008 SPE Workshop on Artificial Lift Systems*, Mendoza, Argentina, April 2008.

11. Javier Raffo, Rita G. Toscano, Luciano Mantovano and Eduardo 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, October 2007.*
12. R. Toscano, J.L. Raffo, L. Mantovano and E.N.Dvorkin, "Effect of the UOE forming process on the structural behavior of steel pipes", *Proceedings 9th US National Congress on Computational Mechanics, San Francisco, USA, July 2007.*
13. R. Toscano and E.N.Dvorkin, "A shell element for elasto – plastic finite strain analyzes.", *Proceedings 9th US National Congress on Computational Mechanics, San Francisco, USA, July 2007.*
14. R. Toscano, J.L. Raffo and L. Mantovano, Tenaris, M. Fritz and R.C. Silva, "On the influence of the UOE process on collapse and collapse propagation pressure of steel deep-water pipelines under external pressure", *Offshore Technology Conference, OTC 18978, Houston, May 2007.*
15. Luciano O. Mantovano, Pablo Amenta, Roberto Charreau, Daniel Johnson, Andrea Assanelli y Rita G. Toscano, "Finite Element Modeling and Experimental Validation of Buckle Arrestors for deepwater pipelines", *Mecánica Computacional, Vol. XXV, pp. 687-704, (Eds. A. Cardona, N. Nigro, V. Sonzogn, M. Storti), Santa Fe, Argentina, November 2006.*
16. R.G.Toscano and E.N.Dvorkin, "Deepwater pipelines: reliability of finite element models in the prediction of collapse and collapse propagation loads", *6<sup>th</sup> International Pipeline Conference, IPC2006-10150, Calgary, Alberta, Canada, September 2006.*
17. 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 7th World Congress on Computational Mechanics, Los Angeles, California, July 2006.*
18. R.G.Toscano and E.N.Dvorkin, "A shell element for finite strain analyses. Hiperelastic material models", *Proceedings 7th World Congress on Computational Mechanics, Los Angeles, California, July 2006.*
19. 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 - 25nd. International Conference on Offshore Mechanics and Artic Engineering, Hamburgo, Germany, 2006.*
20. J. Pereiras, R. Charreau and R. Toscano, "A new solid Sucker Rod connection design: improvements in fatigue behavior", *Tenaris Workshop on Fatigue Design, Dalmine, Italia, marzo 2006.*
21. Rita Toscano, Pablo Buccello, Francisco Ferrari, Gustavo Luszczuk, Luciano Mantovano and José Pereiras, "Aplicaciones industriales del método de los elementos finitos en la industria del acero.

- Análisis de comportamiento estructural y funcional de productos tubulares”, *Mecánica Computacional, Vol. XXIV, (Eds. A.E.Larreteguy)*, Buenos Aires, Argentina, November 2005.
22. 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.
  23. N. J. Santi, SPE, Tenaris; G. E. Carcagno, SPE, Tenaris; Rita Toscano, Centro Investigación Industrial, "Premium & Semi-premium Connections Design Optimization for Varied Drilling-with-Casing Applications", *Offshore Technology Conference, OTC 17221*, Houston, May 2005.
  24. Santiago Grittini and Rita Toscano, "Modelado computacional de la respuesta estructural de tuberías compuestas. Aplicaciones a ductos submarinos", *Mecánica Computacional, Vol. XXIII, (Eds. G.Buscaglia et al)*, 2004.
  25. Gabriel E. Carcagno, Tenaris Connections; Andrea Bufalini, Centro Sviluppo Materiali; Luis Conde, Tenaris; Rita Toscano, Centro Investigación Industrial, "Low SCF Integral Premium Connections for Use in Highly Demanding Casing and Tubing Drilling Operations", *Offshore Technology Conference, OTC 16566*, Houston, May 2004.
  26. Rita G. Toscano, Luciano Mantovano and Eduardo N. Dvorkin, "On the numerical calculation of collapse and collapse propagation pressure of steel deep-water pipelines under external pressure and bending: Experimental verification of the finite element results", *Proceedings 4th International Conference on Pipeline Technology*, pp. 1417-1428, Ostend, Belgium, 9-13 May 2004.
  27. 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.
  28. 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 Arctic Engineering*, 2003.
  29. 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
  30. R.G.Toscano and E.N.Dvorkin, "Collapse and post-collapse behavior of steel pipes", *Fifth World Congress on Computational Mechanics*, Viena, Austria, July 2002.
  31. E.N.Dvorkin and R.G.Toscano, "Thermo-mechanical modeling of the continuous casting of steel slabs", *Fifth World Congress on Computational Mechanics*, Viena, Austria, July 2002.
  32. R.G.Toscano, P.M.Amenta and E.N.Dvorkin, 'Enhancement of the Collapse Resistance of Tubular Products for Deep-Water pipeline Applications', *Proceedings 25<sup>th</sup> OFFSHORE PIPELINE TECHNOLOGY, IBC, Amsterdam*, 2002.

33. 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.
34. 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", *Mec. Comput.*, Vol.19, (Ed. F.Quintana et al.), 2000.
35. R.G.Toscano, A.P.Assanelli y E.N.Dvorkin, "Colapso y post-colapso de tuberías de conducción submarinas", *Mec. Comput.*, Vol.19, (Ed. F.Quintana et al.), 2000.
36. A.P.Assanelli, R.G.Toscano and D.H.Johnson, "Comparación de ensayos a plena escala y modelos de elementos finitos en la calificación de uniones para la industria del petróleo.", *Mec. Comput.*, Vol.19, (Ed. F.Quintana et al.), 2000.
37. 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.
38. 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.
39. Lopez Turconi G., Quintanilla H., Assanelli A.P., Toscano R.G. and Dvorkin E.N., "On DST design and production of high collapse casing.", 40th Mechanical Working and Steel Processing Conference de la I&SS. 1998.

### Other publications

- Marcela B. Goldschmit, Rita G. Toscano y Eduardo N. Dvorkin, SIM&TEC S. A., "¿Cómo puede la mecánica computacional ayudar a la Siderurgia?", *Acero Latinoamericano*, Número 514, Mayo-Junio 2009.

### FELLOWSHIPS

Universidad de Buenos Aires and Ferrocarriles Argentinos, for the post-graduates studies in Railway Engineering, 1983 - 1984.

## PATENTS

### Threaded pipe joint (Thread Profile, Tenaris Blue 1)

**Inventors:** Rita Toscano; Gabriel Carcagno; Giuseppe Della Pina; Tommaso Coppola.

**Assignee:** Tenaris Connections AG

First Filing: Italy # RM2002C000234

**Extended to:**

Algeria, Emiratos Árabes, Bolivia, Brasil, Canadá, Colombia, Ecuador, India, Japón, Noruega, Omán, Trinidad Tobago, Venezuela

**Granted in:**

Argentina, Austria, Australia, Bélgica, Suiza, China, Cuba, Alemania, Dinamarca, Eurasia, Egipto, Europa, España, Francia, Gran Bretaña, Grecia, Hong Kong, Indonesia, Italia, Luxemburgo, México, Malasia, Nigeria, Holanda, OAPI (Países Africanos), Perú, Rumania, Suecia, Singapur, Eslovenia, Turquía, Estados Unidos (**February 8, 2005**), Uzbekistan, Vietnam, Sudáfrica.

### Threaded pipe joint (Dope Pocket, Tenaris Blue 2)

**Inventors:** Rita Toscano; Gabriel Carcagno; Giuseppe Della Pina; Antonio Podrini

**Assignee:** Tenaris Connections AG

First Filing: Italy # RM2002C000274

**Extended to:**

Emiratos Árabes, Bolivia, Brasil, Canadá, Colombia, Ecuador, India, Noruega, Omán, Trinidad Tobago, Venezuela.

**Granted in:**

Algeria, Argentina, Austria, Australia, Bélgica, Canadá, Suiza, China, Cuba, Alemania, Dinamarca, Eurasia, Egipto, Europa, España, Francia, Gran Bretaña, Grecia, Hong Kong, Indonesia, Italia, Japón, Luxemburgo, México, Malasia, Nigeria, Holanda, OAPI (Países Africanos), Perú, Rumania, Suecia, Singapur, Eslovenia, Turquía, Estados Unidos (June 14, 2005), Uzbekistan, Vietnam, Sudáfrica-

### Threaded tube joint (Seal, Tenaris Blue 3)

**Inventors:** Rita Toscano; Gabriel Carcagno; Tommaso Coppola; Tatsuo Ono, Hisao Nakamura

**Assignee:** Tenaris Connections AG

First Filing: Italy # RM2002A000445

**Extended to:**

Emiratos Árabes, Bolivia, Brasil, Canadá, Colombia, Ecuador, India, Japón, Malasia, Noruega, Omán, Trinidad Tobago, Venezuela, Vietnam.

**Granted in:**

Algeria, Argentina, Austria, Australia, Bélgica, Canadá, China, Cuba, Alemania, Dinamarca, Eurasia, Egipto, Europa, España, Francia, Gran Bretaña, Grecia, Hong Kong, Indonesia, Italia, Luxemburgo, México, Malasia, Nigeria, Holanda, OAPI (Países Africanos), Perú, Rumania, Suecia, Singapur, Eslovenia, Turquía, Estados Unidos (August 14, 2007), Uzbekistan

**Sucker rod connection**

**Inventors:** Rita Toscano, Nicolás H.M. Di Toro

**Assignee:** SIDERCA

**Extended to:** Argentina, Brasil, Canadá, China, USA.

**CONFERENCES**

**Participation as speaker**

1. *IX Congreso Argentino de Mecánica Computacional MECOM 2010, II Congreso Sudamericano de Mecánica Computacional, XXXI Congreso Ibero-Latino-Americano de Métodos Computacionales en la ingeniería CILAMCE 2010, Buenos Aires, Argentina, Noviembre 2010.*
2. *28th. International Conference on Offshore Mechanics and Arctic Engineering, Honolulu, Hawaii, 2009*
3. *XVII Congreso sobre Métodos numéricos y sus aplicaciones, ENIEF 2008, San Luis, Argentina, Noviembre 2008.*
4. *27th International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2008), Estoril, Portugal, June 2008.*
5. *6th International Conference on Computation of Shell & Spatial Structures, Spanning Nano to Mega, Ithaca, New York, USA, May 2008.*
6. *Jornadas Técnicas Comahue 2008, Neuquén, Argentina, May 2008.*
7. *2008 SPE Workshop on Artificial Lift Systems, Mendoza, Argentina, April 2008.*
8. *9th US National Congress on Computational Mechanics, San Francisco, USA, July 2007.*
9. *Offshore Technology Conference, Houston, May 2007.*
10. *6th International Pipeline Conference, Calgary, Alberta, Canada, September 2006.*
11. *7th World Congress on Computational Mechanics, Los Angeles, California, July 2006*

12. 25th International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2006), Hamburg, Germany, June 2006.
13. VIII Congreso Argentino de Mecánica Computacional, MECOM 2005, Buenos Aires, Argentina, 2006.
14. Tenaris Workshop on Fatigue Design, Dalmine, Italia, March 2006.
15. Rio Pipeline Conference and Exposition 2005, Rio de Janeiro, Brasil, 2005.
16. Seminarios en Métodos numéricos, Universidad de Buenos Aires, Argentina, julio 2005.
17. 4th International Conference on Pipeline Technology, Ostend, Belgium, 2004.
18. Second MIT Conference on Computational Fluid and Solid Mechanics, (Ed. K.-J. Bathe), Boston, 2003.
19. 22nd. International Conference on Offshore Mechanics and Arctic Engineering (OMAE 2003), Cancún, México, 2003.
20. First South-American Congress on Computational Mechanics, MECOM 2002, Paraná, Octubre-Noviembre 2002.
21. Fifth World Congress on Computational Mechanics, Viena, 2002.
22. Segundas jornadas nacionales de enseñanza de métodos numéricos en la Ingeniería, Univ. Tecnológica, Regional Haedo, Pcia de Buenos Aires, 2001.
23. Aplicaciones de la mecánica computacional en la industria siderúrgica, Universidad de San Andres, Pcia. de Buenos Aires, 2001.
24. Conferencia sobre R&D en la industria siderúrgica, Centro de Estudios Avanzados de la Universidad de Buenos Aires, Maestría en Administración de Ciencia y Tecnología, Buenos Aires, 2001.
25. XI Congreso sobre Métodos Numéricos y sus Aplicaciones, XI ENIEF, San Carlos de Bariloche, Argentina, 2000.
26. Fourth World Congress on Computational Mechanics, Buenos Aires, 1998.

### **Attendance at conferences**

1. Congreso sobre Métodos Numéricos y sus aplicaciones, ENIEF 2007, Córdoba, Argentina, October 2007.
2. Congreso sobre Métodos Numéricos y sus aplicaciones, ENIEF 2006, Santa Fe, Argentina, November 2006.
3. Offshore Technology Conference, OTC 17221, Houston, USA, May 2005.
4. Congreso sobre Métodos Numéricos y sus aplicaciones, ENIEF 2004, Bariloche, Argentina, 2004.

5. 3<sup>rd</sup> Workshop on Subsea Pipelines, Río de Janeiro, Brasil, Noviembre 2002.

6. *IBC'S Offshore Pipeline Technology*, Amsterdam, February 2002.

## CONGRESS ORGANIZATION

- Member of the Organizing Commission of the "Fourth World Congress on Computational Mechanics", Buenos Aires, Argentina, 1998.
- IX Congreso Argentino de Mecánica Computacional MECOM 2010, II Congreso Sudamericano de Mecánica Computacional, XXXI Congreso Ibero-Latino-Americano de Métodos Computacionales en la ingeniería CILAMCE 2010, Buenos Aires, Argentina, Noviembre 2010.

## PROFESIONAL ACTIVITY

### Present activity

SIM&TEC – Simulation and Technology – Partner (2008 --)

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.

### As a staff member

**TECHINT ORGANIZATION** (*Buenos Aires, Argentina*)

*TENARIS-SIDERCA*

*Center for industrial research (CINI)(1993-2007)*

1. Researcher Computational Mechanics Department (1993- 2001).
2. Head, Mechanics of Tubular Products Area, (2001 – 2007).

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:

- Optimization of existing threaded connections and the development of new proprietary threaded connections for OCTG and sucker rods.
- Enhancement of the collapse resistance of tubular products (casing and deep water line pipes).
- Development of finite element models to study the performance of threaded connections, of deep water line pipes, of pipe-in-pipe systems, etc.

- Coordination of all the technical efforts developed at CINI in the field of threaded connections and mechanical behavior of tubular products.

**CONSORCIO ASTRA EVANGELISTA- ROMAN INGENIERIA. (1989)**

- *Design and calculation of steel structures, sysmic analysis.*

**MCKEE DEL PLATA (1988)**

- Design and calculation of steel and concrete structures.

**KANTEK S.A. (1986-1988)**

- Design and calculation of steel and concrete structures, equipment foundations, dynamic analysis, sysmic analysis, etc.

**FERROCARRILES ARGENTINOS. (1983-1986)**

- Design and calculation of steel and concrete structures.

**Independent consultant (1989 - 1993)**

Design and calculation of steel and concrete structures, equipment foundations, dynamic analysis, sysmic analysis, etc.

April, 2011