

# CURRICULUM VITAE

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**Date of Birth:** 25<sup>th</sup> of September 1974

**Nacionality:** Portuguese

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## Academic Degrees

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| 2004- | Course component of the M.Sc. in Economy in the Technical University of Lisbon (ISEG).  |
| 2003  | Second International Course on “Dynamic Energy Budget Theory” (grade 8/10) of the Free University of Amsterdam.   |
| 2003  | M.Sc. in Ecology, Management and Modelling of Marine Resources with the dissertation “Meteorological Forecasting in Continental Portugal with MM5” in the Technical University of Lisbon (IST). |
| 2001  | Course on “Modelling Techniques and Meteorological Prediction applied to the Environment”, in the University of Santiago de Compostela, Spain.  |
| 2001  | Course on “Pedagogy in University Teaching”, Technical University of Lisbon.  |

- 2000 Course on “MM5 - Mesoscale Modelling System”, National Centre for Atmospheric Research, NCAR, Boulder, Colorado, USA.
- 1998 - 2000 Course component of the M.Sc. in Ecology, Management and Modelling of Marine Resources.
- 1993 - 1998 Degree in Environmental Engineering at Instituto Superior Técnico (grade 17/20).
- 1997 Advanced Course on Environmental Management and Modelling, University of Coimbra.

**Present position:** Lecturer at Instituto Superior Técnico (2003 - ).

**Present Work time allocation:** 100% research (January 2004 to November 2006)

**Previous position:** Assistant Lecturer in Instituto Superior Técnico (1999-2003)

**Previous Work time allocation:** 70% teaching (1999-2003)

**Main scientific area of research and interest:** Thermodynamics. Environmental Economics. Ecology. Environmental Systems. Environmental Sustainability.

## **Publications**

- 2005 **Sousa, T.**, Mota, R., Domingos, T., Kooijman, B. Thermodynamic Formalism of Heterotrophic Organisms in the DEB theory. In preparation to be resubmitted to *Theoretical Biology*.
- 2005 **Sousa, T.**, Domingos, T. Is the neoclassical economics formalism valid? A formal analogy between thermodynamics and economics. In preparation to be submitted to *Ecological Economics*.
- 2004 Palma, J, **Sousa, T**, Pita, G., Domingos, J. D. Modeling irrigation in a farm in Portugal. CIHEAM Journal of d'Options Méditerranéennes (in press).

- 2002 **Sousa, T.** Meteorological Forecast in Portugal Continental with MM5. Master Thesis.
- 2002 Palma, J., **Sousa, T.**, Pita, G., Delgado Domingos, J. Filling the gaps in time series from a farm meteorological station. *Proceedings of the VII Congress of the European Society for Agronomy*, Cordoba, 15 to 18 July.
- 2000 N. Sarmento, T. Sousa, **T. Domingos.** The effect of number of basal species and trophic levels on the resilience of Lotka-Volterra food webs. *Proceedings of the International Onsager-Workshop "Optimization in Industrial and Living Systems"*, Leiden, Holanda, 11-14 Março, pp.111-117.
- 1999 J. Domingos, **T. Sousa.** Wind in a city. *Revista Lisboa Urbanismo*.
- 1998 T. Domingos, M. Lopes, **T. Sousa**, P. Vieira. Spatial heterogeneity: a mechanism for ratio dependence. *Revista Biologia* 16: 267-276.
- 1998 T. Domingos, N. Sarmento, **T. Sousa.** Simple and complex lake models have similar dynamical properties. *Revista Biologia* 16: 259-265.

## Conferences

- 2004 'A Unified Formalism for Neoclassical Microeconomics and Macroscopic Thermodynamics', Domingos, T., **Sousa, T.** Montréal 8<sup>th</sup> Biennial Scientific Conference International Society for Ecological Economics, Montreal, Canadá, 11-14 Junho, 2004.
- 2004 'Phase Transitions in Macroscopic Thermodynamics and Neoclassical Microeconomics', **Sousa, T.**, Domingos, T. Montréal 8<sup>th</sup> Biennial Scientific Conference International Society for Ecological Economics, Montreal, Canadá, 11-14 Junho, 2004.

- 2004 'Financing Public Goods in an Endowment Economy with Status Effects', Azevedo, I., Simoes, A., **Sousa, T.**, Domingos, T.. Montréal 8<sup>th</sup> Biennial Scientific Conference International Society for Ecological Economics, Montreal, Canadá, 11-14 Junho, 2004.
- 2003 **Sousa, T.**, Mota, R., Domingos, T. Thermodynamics of Heterotrophic Organisms in the DEB theory. *Alcalá 2<sup>nd</sup> International Conference on Mathematical Ecology*, Alcalá de Henares, Spain, 5 - 9 September.
- 2003 Domingos, T., Sarmento, N., **Sousa, T.** Structural Features and The Feasibility of Lotka-Volterra Food Webs Without Omnivory: A Systematic Analysis. *Alcalá 2<sup>nd</sup> International Conference on Mathematical Ecology*, Alcalá de Henares, Spain, 5 - 9 September.
- 2003 Palma, J., **Sousa, T.**, Pita, G., Domingos, J., D. Modeling Irrigation in a Farm in Portugal. *Poster presented in the conference on Mediterranean Rainfed Agriculture Strategies for Sustainability*, Zaragoza (Spain), 2-3 June.
- 2002 J. Palma, **T. Sousa**, J. Domingos, and G. Pita. Filling the gaps in time series from a farm meteorological station. *VII Congress of the European Society for Agronomy*, Cordoba, 15 a 18 Julho.
- 2001 **T. Sousa**, J. Domingos. Using MM5 in the Lisbon area 12, 13 and 14 June – Exploratory Results'. *Poster presented in Modeling Techiques and Meteorological Prediction applied to the Environment*, in Santiago Compostela, Spain.
- 2001 A. R. Trancoso, I. Costa, P. Galvão, R. Mota, G.l Pita, A. Simões, **T. Sousa**. Modeling the temperature profile in the soil. *Poster presented at the 1<sup>st</sup> National Congress on Soil Sciences*, Lisbon,

- 2000 'Thermodynamics of Ecosystems', Sarmento, N., **Sousa, T.**, Domingos, T, International Onsager Workshop – Optimization in Industrial and Living Systems, Oud Poelgeest, Leiden, Holanda, 11-14 de Outubro.
- 1998 T. Domingos, M. Lopes, **T. Sousa**, P. Vieira. Spatial heterogeneity: a mechanism for ratio dependence. *Biannual meeting of the International Society of Ecological Modelling*, ISEM, Baltimore, U.S.A, from 2 to 6 August.
- 1998 T. Domingos, N. Sarmento, **T. Sousa**. Simple and complex lake models have similar dynamical properties. Biannual Meeting of the International Society of Ecological Modelling, ISEM, Baltimore, E.U.A, 2 a 6 de Agosto.
- 1998 T. Domingos, N. Sarmento, **T. Sousa**. Resilience and trophic chain length: can the relation be unequivocally established?. Biannual Meeting of the International Society of Ecological Modelling, ISEM, Baltimore, E.U.A, 2 a 6 de Agosto.

## Teaching

- 2003 - 04 Biophysical Planning for Environmental Engineering. Thermodynamics for Mechanical, Naval and Aerospace Engineering .
- 1999/2003 Environmental Modelling for Environmental Engineering. Atmospheric Thermodynamics for Environmental Engineering. Biophysical Planning for Environmental and Land Planning Engineering. Thermodynamics for Mechanical Engineering. Energy and Environment for Environmental Engineering (2000/2001 and 2002/2003). Atmospheric Pollution for Environmental Engineering students (1999/2000).

Lisbon, March 2005.