# Curriculum Vitae et Studiorum

**Personal Data**:

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|---|---|
| Name : | Tommaso Leonori |
| Date and place of birth : | 28/5/1979, Rome |
| Address : | Calle rio Duero 32, 28911  Leganés |
| Telephone : | Mobile (+34) 644305284 |
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## Education and positions

- 12 November 2002: *Degree in Mathematics* University of Rome "La Sapienza". Title of thesis: *Equazioni ellittiche con termine di ordine inferiore a crescita naturale nel gradiente e dati misura.* Advisor: Prof. L. Orsina.

- November 2002: Doctoral fellow in *Pure mathematics*, (XVIII Ciclo) University of Rome "Tor Vergata ", Rome.

- 3 March 2006: *Ph.D. in Mathematics*, University of Rome "Tor Vergata". Title of thesis: *Large Solutions for a class of Nonlinar Elliptic Equation with Gradient Terms.* Advisor: Prof. A.Porretta. Commission: G.Tarantello (Rome), J.P. Puel (Versailles), F.Murat (Paris).

- December 2005-September 2007: Post-doc position, Department of Mathematics "G. Castelnuovo ", University of Rome "La Sapienza".

- October 2007-December 2008: Post-doc position at CMUC, University of Coimbra (Portugal).

- January 2009- December 2011: Postdoc contract "Juan de la Cierva", University of Granada (Spain).

- January 2012- Now: Position of "Profesor Ayudante Doctor" at University Carlos III, Madrid (Spain).

## Pubblications

1. S.Calogero, T. Leonori, *Ground states of self-gravitating elastic bodies*
   Submitted (http://arxiv.org/abs/1208.1792)

2. D. Arcoya, L.Boccardo, T. Leonori, $W_0^{1,1}$-*solutions for nonlinear elliptic problems with gradient terms* Submitted.

3. D. Arcoya, T. Leonori, A. Primo, *Existence of solutions for semilinear nonlocal elliptic problems via a Bolzano Theorem* Submitted.

4. D. Arcoya, E. Colorado, T. Leonori, *Asymptotically linear problems and antimaximum principle for the square root of the laplacian*, Adv. Nonlin. Stud. **12** (2012), 683–701

5. T. Leonori, A.Porretta, *Gradient bounds for elliptic problems singular at the boundary*, Arch. Rational Mech. Anal. **202** (2011) 663–705

6. T. Leonori, P. Martinéz, A. Primo *Nonlinear Elliptic equations with Hardy potential and lower order term with natural growth* Nonlinear Analysis: Theory, Methods & Applications, **74**(2011) 3556–3569.

7. T. Leonori, F.Petitta *Local estimates for parabolic equations with nonlinear gradient terms*, Calc.Var. **42** (2011) 153–187.

8. L. Boccardo,T. Leonori, L.Orsina, F.Petitta, *Quasilinear elliptic equations with singular quadratic growth terms*, Comm. Cont. Math, **13** (2011) 607–642.

9. D. Arcoya, L.Boccardo, T. Leonori, A.Porretta, *Some elliptic problems with singular natural growth lower order terms*, J.Diff.Eq., **249**, (2010) 2771–2795

10. I.N. Figueiredo, C. Leal, T. Leonori, G. Romanazzi, P. N. Figueiredo, and M. M. Donato, *A coupled convection-diffusion level set model for tracking epithelial cells in colonic crypts*, International Conference on Computational Science, ICCS 2010, 1 (2010) 961–969

11. L.Boccardo, T. Leonori, *Local property of solutions of elliptic equations depending on local property of data,* Methods and Applications of Analysis, **15** (2009) 53–64.

12. D. Arcoya, J. Carmona, T. Leonori, P. J. Martnez-Aparicio, L. Orsina, F. Petitta, *Existence and nonexistence of solutions for singular quadratic quasilinear equations*, J. Diff. Eq., **246** (2009) 4006–4042.

13. T. Leonori, A.Porretta *The boundary behaviour of blowup solutions related to a state constraint problem*, SIAM Math. Anal. **39** (2008), 1295–1327.

14. T. Leonori, F.Petitta *Existence and regularity results for some singular elliptic problem*, Adv. Nonlin. Stud. **7**(2007), 329–344.

15. T. Leonori *Large solutions for a class of nonlinear elliptic equations with gradient terms*, Adv. Nonlin. Stud. **7**(2007), 237–269.

16. T. Leonori *Bounded solutions for some Dirichlet problems with $L^1(\Omega)$ data*, Boll. U.M.I., sez. B, **4** (2007) 785–796.

17. T. Leonori, F.Petitta *Asymptotic behavior of solutions for parabolic equations with natural growth term and irregular data*, Asymptotic Analysis **48(3)** (2006), 219–233.

## Other pubblications

1. T. Leonori *Gradient Bounds for Elliptic Problems Singular at the Boundary and Application to a Stochastic Control Problem with State Constraint*, Proceedings of the ICM 2010, Hyderabad, India

2. T. Leonori *Large solutions for a class of nonlinear elliptic equations with gradient terms*, Ph.D. Thesis (2006) at University of Roma "Tor Vergata". Advisor: Prof A.Porretta

3. T. Leonori *Equazioni ellittiche con termini di ordine inferiore a crescita naturale nel gradiente e dati misura*, Degree Thesis at University of Roma "La Sapienza"(2002). Advisor: Prof. L.Orsina.

## Seminars

1. 13 August 2004: *About some PDE with measure data*, Cortona 2004, il Palazzone, organizers: SMI–SNS di Pisa, UNESCO.

2. 3 March 2006, *Large solutions for a class of nonlinear elliptic equations with gradient terms*, Department of Mathematics, University of Rome "Tor Vergata".

3. 23 May 2007, *Comportamento asintotico per soluzioni esplosive legate ad un problema di controllo stocastico con vincoli di stato*, Department of Mathematics, University of Rome "Tor Vergata".

4. 18 September 2007, *Large solutions for a class of nonlinear elliptic equations with gradient terms*, Primer Encuentro de la Red de Ecuaciones Parablicas y Elpticas No Lineales, San José, Spain.

5. 12 October 2007, *Large solutions for a class of nonlinear elliptic equations with gradient terms*, CMUC- Department of Mathematics, University of Coimbra.

6. 13 December 2007, *The boundary behavior of blow-up solutions related to a stochastic control problem with state constraint*, CIM Workshop on PDEs, Numerical Simulation and Applications Coimbra.

7. 19 June 2008, *The boundary behaviour of blow-up solutions related to a stochastic control problem with state constraint*, Workshop on Elliptic and Parabolic Equations and Systems, Napoli.

8. 20 November 2008, *Existence, regularity and applications to a stochastic control problem of some nonlinear elliptic equations* CMA-University of Oslo.

9. 12 December 2008, *Existence and nonexistence of solutions for singular quadratic quasilinear equations*, CMUC- Department of Mathematics, University of Coimbra.

10. 4 April 2009, *Existence and nonexistence of solutions for singular quadratic quasilinear equations*, 2éme EPEDPNL'2009, Equations aux Drives Partielles Non Linaires, Ttouan, 31 March- 5 April 2009 .

11. 18 May 2010, *Gradient bounds for elliptic problems singular at the boundary and application to a stochastic control problem with state constraint*, INdAM Workshop on vector-valued mappings and systems of PDE's, Rome

12. 10 June 2010, *Gradient bounds for elliptic problems singular at the boundary and applications*, Università Bicocca, Milano

13. 7 July 2010, *Quasilinear singular equations*, Universidiad de Coimbra

14. 25 August 2010 *Gradient Bounds for Elliptic Problems Singular at the Boundary and Application to a Stochastic Control Problem with State Constraint*, ICM 2010, Hyderabad, India

15. 30 March 2011, *Problemas elipticos no lineales con terminos de orden inferior singulares*, Universitat de Valencia

16. 5 September 2011, *Lipschitz solutions of elliptic problems with singularity at the boundary and applications* CEDYA, Palma de Mallorca.

17. 13 September 2011, *Lipschitz estimates for solutions of elliptic equations singular at the boundary*, CIDAMA, Almería

18. 16 November 2011, *Lipschitz estimates for solutions of elliptic equations singular at the boundary*, UAM, Madrid

19. 24 January 2012, *Lipschitz estimates for solutions of elliptic equations singular at the boundary*, Universidad de Granada.

20. 22 March 2012, *Some results about large solutions for nonlinear elliptic equations and their applications*, Universidad Carls III, Madrid.

21. 8 May 2012, *Lipschitz bounds for nonlinear elliptic equation with strong singularity at the boundary*, Universidad Carls III, Madrid.

22. 2 July 2012, *Problemas elípticos no lineales con términos de orden inferior singulares*, Universidad de Granada

## Teaching Activity
**Graduate:**

- *Calculus I* University of Madrid "Carlos III", A.Y. 2011–2012

- *"Calculo Avanzado"*, Universidad de Granada, A.Y. 2011–2012 (4,5 CFU)

- *"Calculo Avanzado"*, Universidad de Granada, A.Y. 2010–2011 (3 CFU)

- *"Fundamentos de Matematica I"*, Universidad de Granada, A.Y. 2010–2011 (1,5 CFU)

- *"Ecuaciones en Derivadas Parciales"*, Universidad de Granada, A.Y. 2009–2010 (2 CFU)

- *"Analisis nolineal"*, PhD Program Fisymat, Universidad de Granada, A.Y. 2009–2010 and A.Y. 2010–2011(2 CFU each year)

- *Calculus II* (Faculty of Architecture, University "Roma 3", A.Y. 2006–2007). (3 CFU)

- *Calculus I* (Clinical engineering, University of Rome "La Sapienza", A.Y. 2006–2007). (10 CFU)

**Postgraduate:**

- I have organized and given the course *"Ecuaciones elípticas no lineales con términos gradiente"* for the Phd program FisyMat during the A.Y. 2011–2012, jointly with Prof. L.Boccardo (Univ. of Roma La Sapienza), and Prof. A.Porretta (Univ. of Roma Tor Vergata).

  I have also obtained a financiacion of 1.600 euros by "Proyecto GENIL"for this course.

- *"Analisis nolineal"*, PhD Program Fisymat, Universidad de Granada, A.Y. 2009–2010 and A.Y. 2010–2011(2 CFU each year)

## Visits

1. May 2006: Visitor at Department of Mathematics of University Autonoma (Madrid), Department of Mathematical Analysis of Granada and Department of Mathematical Analysis of Valencia.

2. July 2007: Visitor at Department of Mathematical Analysis and Algebra of University of Almeria, invited by Professor J. Carmona.

3. October 2007: Visitor at Department of Mathematical Analysis of University Granada, invited by Professor D. Arcoya.

4. April 2008: Visitor at Department of Mathematical Analysis of University Granada, invited by Professor D. Arcoya.

5. November 2008: Visitor at C.M.A.-University of Oslo, invited by Doct. F. Petitta

6. November 2008: Visitor at Department of Mathematical Analysis of University Granada, invited by Professor D. Arcoya.

7. February 2009: Visitor at at Department of Mathematical Analysis of University Valencia.

8. June 2009: Visitor at CMUC (Coimbra), invited by Professor I. de Figueiredo.

9. February 2010: Visitor at at Department of Mathematical Analysis of University Valencia, invited by Doct. F. Petitta.

10. May/June 2010: Visitor at at Department of Mathematics of University of Milan Bicocca, invited by Doct. A. Primo.

11. July 2010: Visitor at at CMUC, Invited by Prof. Urbano.

12. March 2011: Visitor at at Department of Mathematical Analysis of University Valencia, invited by Doct. F. Petitta.

13. May 2011: Visitor at at Department of Mathematical Analysis and Algebra of University of Almeria, invited by Prof. J. Carmona.

14. November 2011: Visitor at at Department of Mathematics of UAM, invited by Prof. I. Peral.

15. January 2012: Visitor at Department of Mathematical Analysis of University Granada, invited by Professor D. Arcoya.

16. Abril 2012: Visitor at Department of Mathematical Analysis of University Granada, invited by Professor D. Arcoya. (3 weeks)

17. June 2012: Visitor at Department of Mathematical Analysis of University Granada, invited by Professor D. Arcoya. (3 weeks)

## International Conferences and Courses

1. Workshop on Nonlinear Elliptic PDE's and Applications, Granada 15 and 16 December 2011.

2. V CURSO INTERNACIONAL DE ANÁLISIS MATEMÁTICO EN ANDALUCÍA. Almería, del 12 al 16 de septiembre de 2011.

3. XXII CEDYA Palma (Mallorca) del 5 al 9 de septiembre de 2011

4. JORNADES D'INTERACCIÓ ENTRE SISTEMES DINÁMICS I EQUACIONS EN DERIVADES PARCIALS (JISD2011), Barcelona, June 27-July 01, 2011

5. The International Congress of Mathematicians, Hyderabad 19-27 August 2010

6. GNAMPA - ERC- SUMMER SCHOOL, from 13th to 18th June 2010, Ischia (Napoli, Italy).

7. INdAM Workshop on vector-valued mappings and systems of PDE's, Rome, Italy, 17-21 May 2010.

8. Nonlinear PDE and Boundary Value Problems with Measure Data, Technion - Israel Institute of Technology Haifa, Israel, 1-5 March 2010

9. School in Regularity Estimates for Nonlinear Elliptic and Parabolic Problems, June 22 - June 27, 2009 - Cetraro (CS), Italy

10. An international conference in memoriam Fuensanta Andreu. Burjassot, Spain, May 28-30, 2009

11. 2éme EPEDPNL'2009, Equations aux Drives Partielles Non Linaires, Ttouan, 31 March- 5 April 2009 .

12. June 18-20 2008, *Workshop on Elliptic and Parabolic Equations and Systems*, Napoli

13. April 7-11 2008, *Topics in PDE's and applications 2008*, Granada

14. December 13-15 2007, *CIM Workshop on PDE's, Numerical simulations and applications*, Coimbra, Portugal.

15. September 17-19 2007 *Primer Encuentro de la Red de Ecuaciones Parablicas y Elpticas No Lineales* San José, Spain.

16. July 22–27 2007, *CIM/UC Summer School: Topics in Nonlinear PDEs,Centro Internacional de Matematica (CIM)*, Coimbra, Portugal. Speakers: Luis Caffarelli (University of Texas at Austin, USA),Charlie Elliott (University of Sussex, UK), Felix Otto (University ofBonn, Germany) and Benoit Perthame (Ecole Normale Suprieure,France).

17. June 26-29, 2007, *An international conference in honour of Juan Luis Vázquez on the occasion of his 60th birthday*, El Escorial, Spain.

18. February 12–15 2007 *R*ecent Trends in Non-linear Partial Differential Equation: A celebration of the 60th birthday of Ireneo Peral, Salamanca, Spain Febrero 2007.

19. October 30-November 1 *Renormalisation en EDP & Applications* ENSAM, Meknès, Maroc.

20. June 19-21 2006 *ESPALIA 2006*, Department of Mathematics, University of Rome "La Sapienza".

21. February 5-10, 2006  *XVIe Giornate di Lavoro su "Questioni di Teoria Geometrica della Misura e di Calcolo delle Variazioni"*, Levico Terme (Trento).

22. January 16-20, 2006, *Third Trilateral Meeting Australia - Taiwan - Italia*, Department of Mathematics, University of Rome "La Sapienza".

23. May 30–June 3, 2005: *Infinite energy solutions of partial differential equations and related topics*, INdAM meeting, Cortona.

24. January 10-14 2005, *Variational Methods and Nonlinear Differential Equations (in occasione del sessantesimo compleanno di Antonio Ambrosetti)*, Roma.

25. September 30–October 2, 2004: Meeting on *Teoria Geometrica della Misura e Calcolo delle Variazioni*, Lizzanello (Lecce).

26. September 20–24, 2004: Summer course on *Analysis and Applied Mathematics*, Rome.

27. August 2004: Summer course on *Calculus of variations*, Cortona 2004, held by A. Cellina (Univ. Bicocca di Milano), G. Bouchitt (Univ. Di Toulon).

28. May 30–June 3, 2004: *Fifth European Conference on Elliptic and Parabolic Problems* (A Special Tribute to the work of Haim Brezis), Gaeta.

29. January 26–28, 2004, *School on Geometric Evolution Problems*, Roma.

30. January 28–31, 2003: International Conference on *Nonlinear evolution problems*, Rome.

31. January 9–11, 2003: *Giornate Nonlineari*, Rome.

32. 31 March -1 April 2003, *Conferenza Franco-Italiana in memoria di Guido Stampacchia*, Paris.

## Languages

- *Italian*: Mother tongue.

- *English*: Very good.

- *Spanish*: Very good.

- *Portuguese*: Basic.

## Other Activities

- Co-director of the Master thesis of Laura Gonella: "Periodic solutions for a class of singular nonlinear elliptic problems" defended on September 2011 at University of Granada (FisYMat program).

- May 2011: Accreditation for the position of "Profesor Contratado Doctor", "Professor Ayudante Doctor" and "Professor de Universidad Privada".

- 2000-2002: Collaboration fellow at *Library of Mathematics*, Department of Mathematics "G. Castelnuovo", University of Rome "la sapienza".

- Referee for several international journals

- Organization of the visits and the seminar of the following researchers:

  Prof. Alessio Porretta (Università di Roma "Tor Vergata")
  Prof. Lucio Boccardo (Università di Roma "La Sapienza")
  Prof. Andrea Dall'Aglio (Università di Roma "La Sapienza")
  Prof. Luigi Orsina (Università di Roma "La Sapienza")
  Prof. N. Fusco(Università di Napoli "Federico II")
  Prof. J.M. Urbano (CMUC-Universidad de Coimbra)
  Prof. Marco Squassina (Università di Verona)
  Prof. David Arcoya (Universidad de Granada)
  Doct. Gaetano Siciliano (Università di Bari)
  Doct. Giusi Vaira (SISSA)
  Doct. Sara Barile (Università di Bari)
  Doct. Ana Primo Ramos (Università di Milano Bicocca)
  Doct. Francesco Petitta (Universidad de Valencia)

- have obtained a financing to organise the following courses of the PhD program FisyMat:
  - A.A. 2010–2011 "*The quantitative isoperimetric inequality and applications* "given by Prof. N. Fusco(Università di Napoli "Federico II")
  - A.A. 2011–2012 "*Ecuaciones elípticas no lineales con términos gradiente*"for the Phd program FisyMat given by Prof. L.Boccardo (Univ. of Roma La Sapienza), and Prof. A.Porretta (Univ. of Roma Tor Vergata) and myself.

- From October 2012 I also belong to the centre ICMAT

- I have been part of the following projects:

  Name: Equazioni Differenziali Nonlineari- "Sapienza" Università di Roma
  Financed by: Gruppo Nazionale COFIN (MIUR)
  From: 1/9/2005    To: –
  IP: Lucio Boccardo

  Name: Anlisis No Lineal y Ecuaciones en Derivadas Parciales Elpticas MTM2006-09282
  Financed by: MICINN
  From:12/2006    to : 11/2009
  IP: David Arcoya

  Name: Anlisis No Lineal y Ecuaciones en Derivadas Parciales, MTM2009- 10878
  Financed by: MICINN
  From:01/2010    to: 12/2012
  IP: David Arcoya

  Name:Analisis no lineal y ecuaciones en derivada parciales FQM-116
  Financed by: Junta de Andaluca
  From:1994    To: –
  IP: David Arcoya

  Name: Projecto FCT
  Financed by: Fundaao para a Ciencia e a Tecnologia
  From:01/2010    To: 12/2011
  IP: José Miguel Urbano