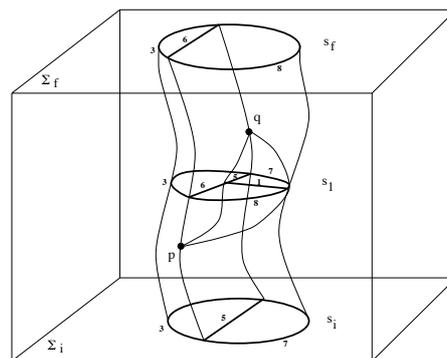


# Francesca Vidotto

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## Personal details

Date of birth: 22/11/1980  
Citizenship: Italian  
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## Profile

I'm a researcher in Theoretical Physics, with interests in Quantum Gravity, Quantum Cosmology, Quantum Field Theory, History and Philosophy of Science.

## Positions

- 2014/17 NWO Veni fellow at Radboud University, Nijmegen, Netherlands.  
Research-group leader: Prof. Klaas Landsman
- 2012/14 NWO Rubicon fellow at Radboud University, Nijmegen, Netherlands.  
Research-group leader: Prof. Renate Loll
- 2011/12 Researcher at Laboratoire de Physique Subatomique et de Cosmologie and teaching assistant at Université J. Fourier in Grenoble, France (ATER).  
Research-group leader: Prof. Aurélien Barrau

## Habilitations

- 2014–Habilitation as associate professor in Italy, Sec 02 Theoretical Physics.
- 2013–Qualification for teaching positions in France, Sec 29 - Maître de Conference.

## Education

- 16/02/12 PhD in Physics, University of Pavia, Italy;  
adjoint supervision with the University of Marseille, France.  
Title: *General covariant transition amplitudes in quantum cosmology*  
Advisors: Prof. Carlo Rovelli and Prof. Mauro Carfora
- 17/10/08 “Laurea” (M. Sc.) in Physics, University of Padova, Italy, final mark 100/110  
Title: *Closed models and Inhomogeneities in Loop Quantum Cosmology*  
Advisors: Prof. Carlo Rovelli and Prof. Sabino Matarrese

Master courses taken:  
Quantum Field Theory, Theory of Fundamental Interactions, General Relativity, Cosmology.

## Publication summary:

(updated at 24/11/14)

All papers	18
Published	12 (2 papers with more than 70 citations)
Total number of citations:	344 (342 excluding self citations)
Average citations per paper:	19 (26 published only)
$h_{\text{HEP}}$	11

**Talks presented in international conferences:** ~30

## Fellowships

2014 – “Veni fellowship” ( 250.000 € ) awarded by the Netherlands Organization for Scientific Research (NWO) for the research project: “Investigating the early universe with quantum gravity” to be held at Radboud University, the Netherlands (36 months).

2012 – “Rubicon fellowship” ( 118.000 € ) awarded by the Netherlands Organization for Scientific Research (NWO) for the research project: “Exploring the early universe with quantum gravity” to be held at Radboud University, the Netherlands (24 months).

2009 – “Fondazione Angelo Della Riccia” scholarship ( 11.000 € ) for research in Quantum Gravity.

2008 – Undergraduate Summer Research Position (3 months) c/o Perimeter Institute, Canada  
Project: “Early Universe in a Quantum Cosmos”, Supervisor: Parampreet Singh.

2007 – Erasmus scholarship ( 1 year ) c/o Centre de Physique Théorique, Marseille, France

## Awards

- “Planck Stars“ By Carlo Rovelli, Francesca Vidotto.

Honorable mention at the gravity essay contest by Gravity Research Foundation, USA.

- “Many-nodes/many-links spinfoam: the homogeneous and isotropic case”

By Francesca Vidotto. Class.Quant.Grav.28:245005,2011.

Selected by the editors of Class.Quant.Grav. for inclusion in the ‘Highlights of 2011-2012’.

- James B. Hartle Award for the best student presentation at the 19th International Conference on General Relativity and Gravitation (GR19), Mexico City.

- “Single particle in quantum gravity and BGS entropy of a spin network “

By Carlo Rovelli, Francesca Vidotto. Phys.Rev.D81:044038,2010

Honorable mention at the gravity essay contest by Gravity Research Foundation, USA.

## Referees for

Physical Review Letters, Physical Review D, Classical and Quantum Gravity, General Relativity and Gravitation, Studies in History and Philosophy of Modern Physics.

## Book

- Covariant Loop Quantum Gravity

*An elementary introduction to Quantum Gravity and Spinfoam Theory*

By Carlo Rovelli and Francesca Vidotto. To be published by CUP, December 2014.

## Teaching

2011/2012 – Physic Laboratory 1, Quantum Mechanics and Special Relativity for undergraduates at Université J. Fourier in Grenoble, France.

## Mentoring

- Supervision of Master research internship (Bertrand Jayles)

Title: “Entanglement in Spinnetwork States” Period: 01/03/2014-30/06/2014

- Supervision of Bachelor research internship (John van de Wetering)

Title: “Entanglement in Spinnetwork States” Period: 01/02/2014-15/07/2014

## Languages

English, fluent; French, fluent; Spanish, basic understanding; Italian, mother language

### **Administrative experience**

2002/04 – Elected member of the Faculty Council, University of Padova;  
2002/04 – Elected member of the Equal Opportunity Committee, University of Padova;  
2001/02 – Member of the Faculty Permanent Didactic Commission, University of Padova.

### **Popularization activities**

2011 – Open-air lecture “L’equazione dell’universo” at Festival della Letteratura, Mantova, Italy.  
2005 – Preparation and guide service at the Scientific Exposition “Sperimentando”  
for INFN and Department of Physics, University of Padova, May;  
2005 – Scientific advisor for the play “That Blue Light. Life of Marie Curie”  
by Ursa Major Theater, direction of Irene Ros;  
2005 – Main organizer of the Theatrical Review “La Scienza a Teatro”, University of Padova, Spring.

### **Science and society**

2001 – Main organizer, Workshop “Globalizzazione, quale (co)scienza?”, University of Padova, May;  
2003 – Main organizer, Conferences Cycle “Donne e Scienza:  
tre incontri con/tra donne di scienza”, University of Padova, Spring;  
2005 – Invited speaker, Seminar “Gender in Science and Engineering:  
testimonies, researches, ideas.”, University of Padova, February;  
Seminar “Il corpo, alleato nell’apprendimento”, Physics Department, University of Padova;  
Lecture, “Donne, Scienza e Potere. Oseremo disturbare l’Universo?” Second Conference of  
the Italian Women and Science Association, University of Lecce, Italy, September;  
Scientific Committee and Chair Person, Third Conference of the Italian Women and  
Science Association, University of Padova, September.

### **Other interests**

- Philosophy of Science, in particular in the prospective of Feminist Epistemology.
- Art & Science. I have been active in promoting science in theater.
- History of Science, and sociological aspects of science.

### **Other professional experiences**

2006 – Editor of conference acts for the Equal Opportunity Committee, University of Padova;  
2001 – Web designer for the Equal Opportunity Committee, University of Padova.

## Conferences and selected talks

(for the slides of each talk, please visit: [www.hef.ru.nl/~fvidotto/events/myevents.html](http://www.hef.ru.nl/~fvidotto/events/myevents.html))

2015 – LOOPS15, Erlagen, Germany

37 *talk TBA*

– EFI Winter Conference on Canonical and Covariant LQG, Tux, Austria, February;

36 *talk TBA*

35 *talk Planck Stars* GRAPPA Institute, Amsterdam, the Netherlands

– Physics@FOM Veldhoven 2015, Utrecht, the Netherlands

34 *talk Planck Stars*

2014 – *talk (invited) Planck Stars* Physics Department, Trento, Italy

– XI International Ontology Congress, Barcelona, Spain, October

32 *talk (invited) A relational ontology from General Relativity and Quantum Mechanics*

– XXI SIGRAV Conference on General Relativity and Gravitational Physics, Alessandria, Italy

31 *talk (invited) What can we learn from Loop Quantum Cosmology? The case of Planck Stars*

– International Conference “The Philosophy of Cosmology”, Tenerife, Spain, September

– Conceptual and Technical Challenges for Quantum Gravity, Rome, September

30 *talk Spinfoam Cosmology and Maximal Acceleration*

– Experimental Search for Quantum Gravity, SISSA, Italy, September

29 *talk Experimental Search for Planck Stars*

- 2014 – WE-Heraeus-Seminar Quantum Cosmology, Bad Honnef, Germany, August
- 28 talk (*invited*) *What can we learn from Loop Quantum Cosmology? The case of Planck Stars*
    - Conference “Frontiers in Fundamental Physics”, Marseille, France, July
  - 27 talk: *"Atomism and Relationalism as guiding principles for Quantum Gravity"*
    - XI SIGRAV graduate school “Gravity and the Quantum”, Como, Italy, June
  - 26 talk *Spinfoam Cosmology*
    - Workshop Cosmology and the Constants of Nature, DAMPT, Cambridge, UK, March
    - 4th FQXi's Conference “The Physics of Information”, Vieques, Puerto Rico, January
- 2013 – Seminar on the Philosophical Foundations of Quantum Gravity, U. of Illinois, Chicago, September;
- 25 talk: *"Atomism and Relationalism as guiding principles for Quantum Gravity"*
    - LOOPS13, Perimeter Institute, Waterloo, Canada July
  - 24 talk: *"A covariant prospective on singularity resolution"*;
    - 20th International Conference on General Relativity and Gravitation (GR20), Warsaw, Poland, July
  - 23 talk: *"Maximal acceleration in covariant loop gravity and singularity resolution"*;
    - Mini-workshop "Philosophie et Physique", Laboratoire Sphere\*, Paris, France. 28 June
  - 22 talk *"Spinfoam and Cosmology", APC, Paris, France. 27 June*;
    - Third Oxford Miniseries: "Cosmology and Quantum Foundations", Oxford, UK, June
    - Workshop and Discussion Group: "Inflationary Evidence", Oxford, UK, June
    - Workshop "Spacetime and the Wavefunction", Barcelona, Spain, April
    - Workshop “Infinities and Cosmology”, DAMPT, Cambridge, UK, March;
  - 21 talk: *"Infinities as a measure of our ignorance"*;
    - EFI Winter Conference on Canonical and Covariant LQG, Tux, Austria, February;
  - 20 talk: *"A new twist on spin connection"*;
- 2012 – “The Search for Quantum Gravity: CDT and Friends”, Nijmegen, the Netherlands, December;
- Perspectives of Fundamental Cosmology, Nordita Program, Stockholm, Sweden, November;
  - 19 talk: *"Spinfoam and Cosmology"*;
    - X International Ontology Congress “Physis. From elementary particle to human nature” San Sebastian, Spain, October;
    - 13th Marcel Grossmann Meeting, Stockholm, Sweden, July;
  - 18 talk: *"Spinfoam Cosmology"*;
  - 17 talk: *"Spinfoam for cosmologists"*;
    - Workshop "Quantum Gravity in Paris", APC-Paris, France, March;
    - Workshop "Landscapes for Quantum Gravity", Pavia, Italy, February;
- 2011– VII International Conference on Gravitation and Cosmology, Goa, India, December;
- 16 talk: *"An Invitation to Spinfoam Cosmology"*;
    - VI Aegean Summer School of Quantum Gravity and Quantum Cosmology, Greece, September;
  - 15 talk: *"An Invitation to Spinfoam Cosmology"*;
    - Women in Physics , Perimeter Institute, Canada, July;
  - 14 talk: *"What's the entropy of the gravitational field?"*;
    - “Challenges for Early Universe Cosmology , Perimeter Institute, Canada, July;
  - 13 PI Quantum Gravity group meeting on *"Spinfoam Cosmology"*;

- 2011 – LOOPS11 “Celebrating 25 years of Loop Quantum Gravity”, Madrid, Spain, May;  
12 talk: *“Results and open issues in Spinfoam Cosmology”*;  
11 talk: *“Singularity Resolution in Loop Quantum Cosmology”*;  
– Workshop Mathematical, Physical and Conceptual aspects of Quantum Gravity, APC Paris, March;  
– Workshop “Quantum Gravity and Quantum Field Theory”, Nice, France, March;  
10 talk: *“Spinfoam Cosmology”*;  
– 3rd Quantum Geometry and Quantum Gravity School, Zakopane, Poland, March;  
– Workshop Mathematical, Physical and Conceptual aspects of Quantum Gravity, APC Paris, March;  
– Workshop “Quantum Gravity and Quantum Field Theory”, Nice, France, March;  
9 talk: *“Spinfoam Cosmology”*;  
– 3rd Quantum Geometry and Quantum Gravity School, Zakopane, Poland, March;  
– International Loop Quantum Gravity Seminars, given talk: *“Spinfoam Cosmology”*;  
8 slides and audio available at <http://relativity.phys.lsu.edu/ilqgs/>
- 2010 – International Fall Workshop on GEOMETRY and PHYSICS, Paris, France, October;  
– Spanish Relativity Meeting (ERE2010), Granada, Spain, September;  
7 talk: *“Toward Spinfoam Cosmology”*;  
– 19th International Conference on General Relativity and Gravitation (GR19), Mexico City, Mexico, July;  
6 talk: *“Spinfoam Cosmology: quantum cosmology from the full theory”*;  
– PASI Quantum Gravity summer school, Morelia, Mexico, June;  
– ESF science meeting: Open problems in Loop Quantum Gravity, Zakopane, Poland, March;
- 2009 – 2nd School and Workshop on Quantum Gravity and Quantum Geometry, Corfù, Greece, September.  
– LOOPS09 International Conference on Quantum Gravity, Beijing Normal University, China, August;  
5 talk: *“Quantum-Gravity Thermodynamics”*;  
– The BNU International Summer School on Quantum Gravity, Beijing Normal University, China, July;
- 2008 – Quantum Gravity in Cracow<sup>2</sup>, Jagiellonian University, Institute of Physics, Cracow, Poland;  
4 talk: *“Mini-superspace Loop Quantum Gravity”*;  
– Second TRR33 Winter School “Theory for observers & Observations for theorists”,  
3 Passo del Tonale, Italy, December; talk: *“Loop Quantum Cosmology”*;  
– Emergent Gravity 08 Workshop, MIT Boston, US, August;  
– Young Loops and Foams 08 Workshop, Perimeter Institute, Canada, August;  
– QG2 2008 Quantum Geometry and Quantum Gravity Conference, Nottingham, UK, July;  
2 talk: *“Stepping out of homogeneity in Loop Quantum Cosmology”*;  
– Quantum Gravity Colloquium 4, Albert Einstein Institute, Berlin, Germany, May;  
1 talk: *“Dipole Cosmology”*;  
– Workshop CosmoTools, Marseille, France, April;  
– ESF science meeting Quantum Gravity: Loops and Foams, Zakopane, Poland, March;
- 2007 – Italian Logic and Philosophy of Science (SILFS) Conference, Milano, Italy, October;  
– visitor at the Quantum Gravity group of AEI, Golm, Germany, August;  
– “From Quantum to Emergent Gravity: Theory and Phenomenology”, SISSA Trieste, Italy, June;  
– 1st Quantum Geometry and Quantum Gravity School, Zakopane, Poland, March;
- 2005 – International Conference “Spacetime in Action”, Pavia, Italy, March;
- 2001 – IV Summer School of Philosophy of Physics (SILFS), Cesena, Italy, September.