Carlo Rovelli

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Luminy, Case 907,
F-13288 Marseille, France

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rovelli@cpt.univ-mrs.fr
http://www.cpt.univ-mrs.fr/∼rovelli

Present position

– *Professeur de classe exceptionnelle*, Université de la Méditerranée, Marseille, France.

Honorary positions

– *Institut Universitaire de France*, Senior Member.
– *Beijing Normal University, Beijing, China*, Honorary Professor.
– *Académie Internationale de Philosophie des Sciences*, Membre Titulaire.
– *Accademia di Agricultura Scienze e Lettere di Verona*, Honorary Member.
– *Accademia Galileana*, Member.
– *Department of History and Philosophy of Science, Pittsburgh University*, Affiliated Professor.

Education

1970-1975	Liceo Maffei, Verona	Classical studies
1975-1981	Università di Bologna	Laurea in Fisica (with honors)
1983-1986	Università di Padova	Dottorato di Ricerca (Ph.D.) in Physics

Professional Employment

2006-pres	Université de la Méditerranée	Professeur de classe exceptionnelle
2000-2006	Université de la Méditerranée	Professeur (1ere classe)
1999-2000	Pittsburgh University	Full Professor
1998-1999	CPT Luminy	Directeur de Recherche
1994-1999	Pittsburgh University	Associate Professor
1990-1994	Pittsburgh University	Assistant Professor
1989	Sissa, Trieste	Post-Doctoral position
1989	Syracuse University	Visiting Fellow
1987	Yale University	Post-doctoral Fellowship
1987-1988	Università di Roma	INFN Post-doctoral position
1986	Imperial College London	Visiting position

Awards and honors

– *Chancellor Distinguished Research Award*, University of Pittsburgh 1993.
– *1994 Annual Series Lecturer*, Pittsburgh Center for Philosophy of Science.
– *Xanthopoulos Award*, Triennial International Prize in Relativity, 1995.
– *Gravity Research Foundation, Second Award 1996*, and Honorable mention 1995 and 2002.
– *Idoneo* al concorso Professore Universitario di Prima Fascia, Università di Lecce, Maggio 2000.
– *Chiamata per chiara fama* (Honor nomination) voted by Rome University Physics Dept, 2002.
– *Prix du Rayonnement International*, Festival des Sciences et des Technologies, 2004.
– *2005 and 2009 Selection* by IOP Select for the articles [127] and [151] below.
– *First Prize* of the 2009 FQXi "The nature of Time" Community Essay Contest.
– *Second Prize* of the 2013 FQXi Essay Contest.
– *Fellow of the International Society of General Relativity and Gravitation*, 2010.
– *Aspen Insititute Italia*, membro della sezione "Protagonisti italiani nel mondo".

– *Prix du jury du jury du festival d'Astronomie de la Haute Maurienne*, for the book "Anaximandre de Millet" 2011.
– *2014 Prize "Premio Merk-Serono"*,
– *2014 Prize "Pagine di scienza di Rosignano"*,
– *2014 Prize for scientific writing "Premio Galileo"*,
– *2015 Prize " Premio Larderello"* ,
– *2015 Prize "Premio Alassio centolibri per l'informazione scientifica"*,
.

Others

Section Editor, Annales Henri Poincaré (Section: quantum gravity), 2008 –

Editorial Board, Journal of Theoretical and Computational Physics (JTCP), 2011 –

Editorial Board, SIGMA (Symmetry, Integrability and Geometry: Methods and Applications), 2008, –

Editorial Board, Classical and Quantum Gravity, 2005 – 2014

Advisory Panel, Classical and Quantum Gravity, 2014 –

Editorial Board, Foundation of Physics, 2006 –

Editorial Board, Journal of Geometric Methods in Modern Physics, 2013 –

Editorial Board, Nuovo Cimento B, 2005 –

Editorial Board, The Gravitational Lens, 2006 –

Editorial Board, Journal of Mathematical Physics, 1995 - 2000

Associate Editor, General Relativity and Gravitation, 1996 - 2006

Scientific commitee of the journal "Lato Sensu, Revue de la Société de philosophie des sciences"

ESA (European Space Agency). Member of the Scientific Advisory Committee (GNSS-GSAC) 2010-2012.

Institut Méditerranéen de Recherches Avancées d'Aix-Marseille, membre du conseille de gestion, en tant que personnalité qualifiée, 20013 –.

Steering Committee of the "Quantum Gravity and Quantum Geometry" European Science Foundation network. 2009 –

Advisory Pannel, Nature, 2008 –

Main Organizer, International Conference "La Forma dello Spazio - Italian research on Quantum Gravity", Trento, Italy, June 1993

Main Organizer, International Conference "Non perturbative quantum gravity", Marseille, France, May 2004

Président "Comité d'évaluation" of the UMR 8627, Laboratoire de Physique Théorique, Orsay, France, december 2009

"Comité d'évaluation" of the UMR 7164, Laboratoire d'AstroParticules et Cosmologie, Paris, France, februray 2008

"NSERC Evaluation commitee" of Perimeter Institute, Toronto, Canada. 4-August 29, 2006

"Comité National" du CNRS (Centre National de la Recherche Scientifique), France, Section 02. 2004 – 2008

Nominating Committee of the International Society on General Relativity and Gravitation 2007-2013

Bergmann-Wheeler Thesis Prize committee

Scientific Committee for the conference "Quantum Gravity", Beijing, July, 2009

Program committee for conference "Inconsistency Robustness 2011", Stanford 2011

Program Commitee of the "Sydney-Tilburg conference on Reduction and the Special Sciences", Tilburg Center for Logic and Philosophy of Science at Tilburg University, The Netherlands, April 2008

Scientific Committee of the International Conference on Gravitation and Cosmology, ICGC-2007, Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, India

Scientific Committee for the conference "Quantum Gravity and Quantum Geometry", Nottingham June 30th-July 4th, 2008

Scientific Advisory Committee of the Loops '07 conference, Morelia, Mexico, June 2007.

International Scientific committee, workshop "Beyond the Standard Model", Università di Bologna, summer 2006.

International Standing Committee and International Advisory Committee of the Albert Einstein Centennial Meeting UNESCO, 2005

Scientific advisory committee, Center for gravity and relativity, University of South of China.

International Committee of the International conference "Loops and Spinfoams 2005", Oct 10-15th, 2005, Albert Einstein Institute, Potsdam, Germany.

Scientific Commitee, "Journé sur la Causalité" ("Einstein 2005", Bordeaux)

Scientific Commitee, SIGRAV (Italian General Relativity Society), 2003-

Scientific Committee, International Conference Mathematical Physics "Chelyabinsk Region", Russia, Summer 2001.

Scientific Committee, International Conference "Constrained Dynamical Systems and Quantum Gravity I", Dubna, Russia, July 1995

Scientific Committee, International Conference "Constrained Dynamical Systems and Quantum Gravity II", Santa Margherita Ligure, Italy, September 1996

Scientific Committee, International Conference "Coherent States, Quantum Mechanics and Quantum Gravity", Warsaw, Poland, August 1998

Comitato Scientifico, SIGRAV graduate school in contemporary relativity and gravitational physics, Villa Olmo, Como (Italy) 1998-present.

International Advisory Committee, "Gravity, Astrophysics and Strings at the Black Sea" Conference 2001.

Advisory Committee, Second Conference "Gravity, Astrophysics, and Strings at the Black Sea", Kiten, June 10th - 16th, 2004.

Advisory Committee, International Workshop "Selected topics of theoretical and Modern Mathematical Physics", Tbilisi, Georgia, July 1996

Advisory Committee, Constrained Dynamics and Quantum Gravity 99, Villasimius, Sardinia, Italy, September 14-18 1999.

Advisory Board, International Workshop Dice 2002 ,September 2002 at the cultural center Accademia dei Ravvivati in the town of Piombino (Italy).

Program Committee, 1996 International Fellows Conference Center for Philosophy of Science, Castiglioncello May 1996

Organizing Committee, International Seminar on Mathematical Cosmology March 30 - April 4,1998, Potsdam, Germany

Editor, Special issue of the Journal of Mathematical Physics on "Quantum Geometry and Diffeomorphism Invariant Quantum Field Theory", in collaboration with L Smolin, 1995

Lecturer "Como school in theoretical physics", Como, Italy 2014

Lecturer "PSI", Perimeter Institute, Toronto, Canada 2013

Lecturer, "PASI school on quantum gravity", Morelia, Mexico, July 2010

Lecturer, "Naxos school on quantum gravity", Naxos, Grece, September 2011

Lecturer, "Corfu school on quantum geometry", Corfu, Grece, September 2009

Lecturer, "First quantum gravity school", Zakopane, Poland, April 2007

Lecturer, "Italian School of Mathematical Physics", Ravello, September 1996

Lecturer, "Karpacz XXXV Winter School of Theoretical Physics "From Cosmology to Quantum Gravity" Polanica, Poland, February 1999

Associate Fellow, Newton Institute, Cambridge UK, 1994

Conseille de Laboratoire, Centre de Physique Theorique de Luminy, 2004 –

Comité des specialistes, Commission 29, Université de Aix Marseille I

Comité des specialistes, Commission 29, Université de Aix Marseille II

Resident Fellow of the Center for the Philosophy of Science, Pittsburgh, PA

Résponsable de l'équippe de gravité quantique du Centre de Physique Théorique de Luminy.

Membre du comité scientifique du Departement de Physique de l'Université de la Méditarranée.

Referee for

Journals: Nature, Physical Review Letters, Physical Review D, Physical Review A, Nuclear Physics, Physics Letters, Proceedings of the Royal Society, Journal of Mathematical Physics, Classical and Quantum Gravity, Journal of General Relativity, General Relativity and Gravitation, Gravity and Geometry, Foundations of Physics, Nuovo Cimento, Modern Physics Letters, International Journal of Modern Physics, International Journal of Theoretical Physics, Europhysics Letters, Complexity, Europhysics Letters.

Publishers: Oxford University Press, Chicago University Press, Birkhauser, Cambridge University Press, Elsevier Publishing Company.

Founding Agencies: National Science Foundation (USA), European Science Foundation (EU), European Marie Curie Networks (EU), Engineering and Physical Sciences Research Council (UK), Agence d'évaluation de la recherche et de l'enseignement supérieur (France), Science Council (Canada), Natural Sciences and Engineering Research Council (Canada), Shared Hierarchical Academic Research Computing Network (Canada), Fonds zur Förderung der Wissenschaftilchen Forschung (Austria).

Grants

"Is space is really discrete? Is time is really non existent?",
Templeton Foundation grant: €190,250 (2012 - 2015)

"Gravité Quantique et Philosophie",
PEPS CNRS : €2,500 (2012)

"Gravitation quantique à boucles : groupe de renormalisation et expériences",
ANR grant SAR 09-BLAN-0041-01 LQG-09: €280,000 (2009 - 2013)

"Collaboration Marseille-Berkeley",
France-Berkeley Fund: $10,000 (2009)

"Gravitation Quantique à boucles",
ANR grant BLAN06-3139436: €180,000 (2006 - 2009)

"Rélativité Génerale",
Institut Universitaire de France: €76,225 (2010 - 2015)

"Rélativité Génerale",
Institut Universitaire de France: €76,225 (2004 - 2009)

"Non perturbative Quantum Gravity",

NSF Grant PHY-9900791: $95,631 (1999 - 2002)

"Non perturbative Quantum Gravity",
NSF Grant PHY-95-15506: $82,000 (1996 -1999)

"Non perturbative Quantum Gravity",
NSF Grant PHY-93-11465: $47,000 (1993 -1995)

"Non perturbative Quantum Gravity",
NSF Grant PHY-90-12099: $63,000 (1990-1993)

Physics Department of the University of Pittsburgh,
Grant PITT 2-11225: $6,670 (1990-1994)

"US-Italy cooperative research: Non perturbative quantum gravity",
NSF Grant: $19,000 (1990-1993)

"US-Argentina cooperative research: General Relativity"
NSF Grant: $11,000 (1992-1993)

INFN Fellowship: Lit. 12,000,000 (1987-1988)

"La forma dello spazio"
INFN Grant: Lit. 5,000,000 (1993)

"La forma dello spazio"
University of Trento Grant: Lit. 4,000,000 (1993)

Research Scholarship "Fondazione della Riccia": Lit. 5,000,000 (1987)

Memberships

American Physical Society

American Society for the Advancement of Science

International Society of General Relativity

Associazione Italiana di Fisica della Gravitazione e Relatività Generale

Others

Italian citizen and citizen of the United States of America
Spoken languages: Italian, French, English, fluent
Born in Verona, Italy, on May 3rd, 1956

Citations

Total number of citations: $\sim$ **10.000**.
"h" factor = 53 (*SLAC-SPIRES* database).

TRAINING AND TEACHING

Ph.D. students or postdocs trained under my supervision who have now permanent positions in universities or research institutions

1. Eugenio Bianchi (PhD, postdoc), Professor at Penn State University (2014).
2. Valentin Bonzom (PhD), Maitre de Conférènce, at the Université Paris XIII (2013).
3. You Ding (PhD), Professor at the Beijing Jiaotong University (2012).
4. Jonathan Engle (postdoc), Professor at Florida State University (2012).
5. Simone Speziale (PhD, postdoc), Chargé de Recherche CNRS (2008).
6. Robert Oeckl (postdoc), Professor at the Universidad Nacional Autonoma de Mexico.
7. Alejandro Perez (PhD), Professeur de prémière classe, at the Aix-Marseille Université, France.
8. Etera Livine (PhD), Chargé de Recherche at the Ecole National Superieure de Lyon, France.
9. Merced Montesinos (PhD), Professor at the CINVESTAV-IPN, Mexico.
10. Marcelo Bareira (PhD), Assistent Professor at the Pontificia Universidade Catolica and Research Professor at Centro Universitario do Sul, Minas, Brasil.
11. Hugo Morales-Tecotl (PhD), Full Professor at the Universidad Autonoma Metropolitana Iztapalapay, Mexico.

Ph.D. Thesis supervised

1. Josè Balduz (Carnegie Mellon University, Pittsburgh)
   Completed November 1994
   "Dynamical Model of Quantum Measurement"
2. Hugo Morales-Tecotl (SISSA, Trieste)
   Completed August 1993
   "Fermions in the Loop Representation"
3. Junichi Iwasaki (University of Pittsburgh)
   Completed January 1994
   "The Linearization of Quantum gravity"
4. Norbert Grott (University of Pittsburgh)
   Completed April 1998
   "Moduli spaces in intersecting Knot Theory"
5. Marcelo Bareira (University of Pittsburgh).
   "Black hole emission spectra"
6. Bill Curry (University of Pittsburgh)
   "The relational interpretation of quantum mechanics"
7. Peush Upadhya (University of Pittsburgh)
   "Loop quantum gravity"

8. Alejandro Perez (University of Cordoba)
   Completed May 2001
   "Finiteness of Spin Foam models"

9. Marcus Gaull (Munich University)
   Completed 2001
   "Hamiltonian constraint in LQG"

10. Etera Livine (Université de la Méditerrané).
    Completed 2002
    "Modèles de mousse de spin" (Prix de Thèse 2003 de l'Université de la Méditerrané)

11. Daniele Colosi (Université de la Méditerrané et Università di Roma)
    Completed Mars 2005
    "Dynamique quantique covariante"

12. Luisa Doplicher (Universitá di Roma)
    Completed February 2005
    "Teoria dei campi quantistica covariante"

13. Florian Conrady (Berlin University)
    Completed September 2005
    "The classical limit of spin foam models"

14. Simone Speziale (Universitá di Roma)
    Completed Jannuary 2006
    "2d Quantum Gravity"

15. Winston Fairbairn (Université de la Méditerrané)
    Completed November 27, 2006
    "Separability in LQG"(Prix de Thèse 2007 de l'Université de la Méditerrané)

16. Mauricio Mondragon Lopez (Université de la Méditerrané)
    Completed March 2008
    "Probability in relativistic quantum mechanics"

17. Emanuele Alesci (05/03/1980 Universitá di Roma III)
    1/11/2005-11/1/2008
    "The complete Loop Quantum Gravity graviton propagator"

18. Elena Magliaro (23/5/1981 Universitá di Roma Tre)
    1/11/2005- 12/1/2009
    "Low-energy limit of Loop Quantum Gravity"

19. Claudio Perini (19-07-1979 Universitá di Roma Tre)
    1/11/2006- 30/4/2010
    "Semiclassical analysis of Loop Quantum Gravity"

20. Eugenio Bianchi (Scuola Normale di Pisa)
    "Loop quantum gravity"

21. Roberto Pereira (15/1/1982 Université de la Méditerrané)
    1/9/2006-8/3/2010
    "The loop quantum gravity vertex"

22. Valentin Bonzom (Université de la Méditerrané)

"Spinfoams from simplicial geometry (Géométrie des simplexes et modèles de mousses de spin)."

23. Francesca Vidotto (22/11/1980 Università di Pavia)
    01/11/2009-16/02/2012
    "General covariant transition amplitude in quantum cosmology"

24. Matteo Smerlak (7/12/1984 Université de la Méditerrané)
    1/9/2008 - 7/12/2011
    "Divergence des mousses de spin: Comptage de puissance et resommation dans le modèle plat"

25. You Ding (Université de la Méditerrané)
    "LQG vertex and hamiltonian"

26. Francesca Vidotto (22/11/1980 Universitá di Pavia)
    01/11/2009-16/02/2012
    "Loop Quantum Gravity and Cosmology"

27. Wolfgang Wieland (30 /1/1984, Aix-Marseille Université)
    1/10/2010-12/12/2013
    "The Chiral Structure of Loop Quantum Gravity (Structure chirale de la gravité quantique à boucles)"
    Prix de Thèse 2013 de l'Université de la Méditerrané

28. Mingyi Zhang (2/6/1987, Aix-Marseille Université)
    15/9/2010.- 21/7/2014,
    "Loop quantum gravity and discrete geometry, Gravite quantique a boucles et geometrie discrete"

29. Aldo Riello (20/09/1987, Aix-Marseille Université)
    1/9/2011 - 22/7/2014
    "Corrections radiatives en gravité quantique à mousse de spins : Une étude du graphe de Self énergie dans le modèle EPRL Lorentzien"

30. Seramika Ariwahjoedi (Indonesia)
    1/10/2012 -

31. Marios Christodoulou (Aix-Marseille Université)
    1/10/2012 -

32. Francois Collet (Aix-Marseille Université)
    1/10/2013 -

33. Thibaut Josset (Aix-Marseille Université)
    1/10/2014 -
    "General covariant statistical mechanics"

Other thesis supervised

1. Alexandru, Mustatea, Master (Université de la Méditerranée),
   "Quantum geometry"
2. Bernard Raffaelli (Université de la Méditerranneée, Marseille), DEA.
   "Quantum Gravity"
3. David Louapre (ENS, Lyon) DEA.
   "Gravité Quantique en 3d"

4. Simone Speziale (Universitá di Roma) Laurea
   "Reconcile Planck-scale discreteness and the Lorentz-Fitzgerald contraction"
5. Frank Hellmann (Munich University) Diploma Thesis
   "Eigenvalues in relativistic quantum mechanics"
6. Francesca Vidotto (Università di Padova) Laurea
   "Loop quantum cosmology. Curved models and inhomogeneities."

Jury

1. Habilitation à diriger des recherches : Alejandro Perez, Marseille 21/2/2006.
2. Habilitation à diriger des recherches (Cosmologie) :
3. Habilitation à diriger des recherches (Philosophie) : Charles Alunni, ENS Paris, 2002.
4. Doctorat (Philosophie) : Alexiei Grinbaum, Polytechnique Paris, 2002.
5. Doctorat : David Louapre, ENS Lyon, 2003.

Courses taught

1. General Relativity 1 (USA, Graduate)
2. General Relativity 2 (USA, Graduate)
3. Classical and Quantum Canonical General Relativity (USA, Graduate)
4. Cosmology (USA, Graduate)
5. Astronomy (USA, Undergraduate)
6. Introductory Quantum Mechanics (USA, Undergraduate)
7. Introductory Physics for Scientists and Engineers 1 (USA, Undergraduate)
8. Introductory Physics for Scientists and Engineers 2 (USA, Undergraduate)
9. Introductory Physics for Scientists and Engineers 3 (USA, Undergraduate)
10. Introductory Physics for non science majors 1 (USA, Undergraduate)
11. Introductory Physics for non science majors 2 (USA, Undergraduate)
12. Physics of Music (USA, Undergraduate)
13. Meccanica Razionale (Italy)
14. Introduction à la Mécanique Quantique (France, DEUG)
15. Rélativité generale (France, Maitrise)
16. Mécanique Quantique (France, License)
17. Optique Géometrique (France, Deug)
18. La Naissance de la Science (France, License)

Introduction and development of new courses

1. La Naissance de la Science (France, License)
   New undergraduate cours proposed and developed at the Université de la Méditarranée. Started winter 2005. 130 students.

BOOKS

1. F Vidotto, C Rovelli: *Covariant Loop Quantum Gravity*, Cambridge University Press, 2014.

2. C Rovelli: *Quantum Gravity*, Cambridge University Press, 2004.
   Available online at http://www.cpt.univ-mrs.fr/∼rovelli/book.pdf

3. C Rovelli: *Cos'è il tempo? Cos'è lo spazio?*, DiRenzo editore, Roma 2004.
   (French: *Qu'est ce que le temps ? Qu'est ce que l'espace ?*, Bernard Gilson, Bruxelles 2006.
   English : *What is Time? What is Space?*, English translation by J.C. van den Berg, DiRenzo editore, Roma 2006.)

4. C Rovelli: *Anaximandre de Milet ou la naissance de la science*, Dunot, Paris, 2009.
   (English: *The First Scientist: Anaximander and his legacy*, Whestholme Chicago 2011.
   Italian: *Cos'è la scienza? La rivoluzione di Anassimandro*, Mondadori, Milano 2011.
   To appear also in Brasil and in Grece.)

5. C Rovelli (editor): *General relativity: The most beautiful of theories* De Gruyter 2014.

POPULARIZATION

Radio

1. "Anaximander"
   Radio Canada. February 2010.
2. "Science et emergence"
   France Culture. February 2008.
3. "La Science et ses réprésentations"
   France Culture. 15 heures, 3 fois. September 2003.
4. "Le oche della scienza"
   Radio 24. Interview on Time in Physics. July 2004.
5. "La Natura della Scienza"
   Radio3Scienza. Interview on the Nature of Science. January 2009.
6. "Le premier scientifique"
   Radio France International. Conversation on the Nature of Science. April 2012.

CD

1. "Interview avec Claude Cohen-Tannoudji"
   De Vive Voix, Paris 2005.
2. "Temps et espace: d'Anaximandre à la gravitéé quantique"
   De Vive Voix, Paris 2007.

Internet

1. "L'Univers est-il accessible à nos sens?"
   Universcience.tv. Le Dèbat et vice-versa
   http://www.universcience.tv//index.php/numero/52

2. "La parole aux chercheurs. Interview"
   ARTE science
   http://www.arte-tv.com/fr/connaissance-decouverte/science/Paroles_20de_20chercheur/Carlo_20Rovelli/1232260.html
3. "On the nature of Science"
   EDGE conversations
   April 2012
   http://edge.org/conversations

Popular lectures

1. "What is space? What is time? Quantum gravity and the beginning of the universe", Beijing, august 2009.
2. "La luna e la scienza", Festival delle letterature, Roma, mai 2009.
3. "Spazio, tempo e gravità quantistica", Conferenza publica, Aula Magna dell'Università di Bologna, December 4th, 2005.
4. "Spazio e tempo prima e dopo Einstein", Lezione Galileana, Università di Firenze, October 3rd 2005.
5. "La gravité quantique : quand l'espace et le temps n'existent plus", Cycle "Einstein et sa posterité", Cité de la Science, Paris, Mars 19, 2005.
6. "Qu'est ce que l'espace ? Qu'est ce que le temps ? La fin des nos certitudes newtoniennes", Echange et Diffusion des Savoirs, Marseille, 10 mars 2005
7. "Nature de l'espace temps", Le Siècle d'A. Einstein - A. Einstein's Century, Colloque Grande Public, July 11-15, 2005, Paris 2005.

Encyclopaedias

1. *Enciclopedia Treccani, XXI SECOLO, L'Universo Fisico*, article "Gravità quantistica". pagina 163. (Treccani 2010)
2. *Encyclopaedia Britannica*, 1991 Yearbook of Science and Technology, article "Knots and Physics".
3. *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.), URL = http://plato.stanford.edu/archives/win2003/entries/rovelli/ entry "Relational quantum mechanics".
4. *Handbook of the Philosophy of Science*. Volume 2: Philosophy of Physics Volume editors: John Earman and Jeremy Butterfield. Handbook editors: Dov M. Gabbay, Paul Thagard and John Woods, entry "Quantum Gravity" (Elsevier, 2006)
5. *Encyclopedia of Mathematical Physics*, eds. J.-P. Françoise, G.L. Naber and Tsou S.T. Oxford: Elsevier, 2006 (ISBN 978-0-1251-2666-3), entry "Loop Quantum Gravity", volume 3 page 339.
6. *Encyclopedia of Mathematical Physics*, eds. J.-P. Françoise, G.L. Naber and Tsou S.T. Oxford: Elsevier, 2006 (ISBN 978-0-1251-2666-3), entry "Canonical general relativity", volume 1 page p. 412.
7. *La Scienza*, Edizioni La Repubblica, Roma 2005, entry "Spazio e Tempo".

Some popularization articles on my work, or by myself

1. "S'affranchir du temps", C Rovelli, Pour la Science, October 2010.
2. *Il Sole 24 Ore, supplemento cultura domenicale*, "Dante e Einstein nella tre-sfera", C Rovelli, October 2010.
3. *La Recherche*, "Oubliez le temps", C Rovelli, dossier, June 2010.
4. *La Recherche*, "Méchanique quantique, un question de perspective", M Smerkal and C Rovelli, April 2008.

5. *The Daily Telegraph*, "On the third stroke, time will be a-changin'", Roger Highfield, February 2008.
6. *Discover*, "Does Time Exist?", T Folger, June 2007.
7. *Physics Today*, "Quantum Gravity Faces Reality", L Smolin, November 2006.
8. *Science et Avenir, Hors-Série*, "Le pile et face quantique", M Bitbol, October/November 2006.
9. *Ciel et espace, Hors-Série*, "Chercher c'est reconnaitre que nous ne savons presque rien", October 2006.
10. *Il Sole 24 ore*, "Stringhe che non tengono", C Rovelli, October, 2006.
11. *The Economist*, "Looping the loop", September 30th, 2006.
12. *New Scientist*, "Supersizing quantum gravity" Cover page and article, D Castelvecchi, August 2006.
13. *Spektrum Wissenshaft*, "Fluch und Segen spekulativer Theorien" ("Curse and benediction of speculative theories"), C Rovelli, 2006N3 108, 2006.
14. *Science et Vie*, "Le monde existe-t-il vraiment?", cover page and feature article, Octobre 2005.
15. *Science et Vie*, "Qu'y avait-il avant le Big Bang?", cover page and feature article, Juillet 2005.
16. *Science et Vie*, "Depasser Einstein", cover page and feature article, April 2005.
17. *Le Scienze*, "Universo, parte seconda", Cristina Valsecchi, June 2005.
18. *Science et Vie*, "Depasser Einstein", cover page and feature article, April 2005.
19. *Scientific American*, "Grains of Space", Lee Smolin, January 2004.
20. *Physics World*, "Loop Quantum Gravity", C Rovelli, November 2003.
21. *Science Magazine*, "Constructing Spacetime–No Strings Attached", Adrian Cho, 8-11-2002.
22. *Science Magazine*, "The beginning of time", Greg Hogan, 3-22-2002.
23. *International Herald Tribune*, "Turn Down That Web, These Scientists Plead, So We Can Think", James Glanz, 6-20-2001.
24. *The New York Times*, "How is the Universe built? Grain by Grain", George Johnson, 12-7-1999.
25. *Science News*, "Loops of Gravity: calculating a foamy quantum spacetime", Ivars Peterson, 6-13-1998.
26. *Discover*, "Beyond Einstein: Is Space Loopy?", Marcia Bartusiak, April 1993.

Science ficton books making extensive reference to my scientific work

1. *Blue Mars*, by Kim Stanley Robinson (Bantam, New York, 1996.)
2. *Schild Ladder*, by Greg Egan (Gollancz, London 2001.)

SCIENTIFIC PAPERS

1. C Rovelli: "Ghosts in Gravity theories with a scalar field", Il Nuovo Cimento 78B, 167 (1983)
2. C Rovelli: "Constraint algebra in General Relativity", Il Nuovo Cimento 92B, 49 (1986)
3. C Rovelli: "Anomalies in quantum gravity", Physics Letters B187, 88 (1987)
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182. C Rovelli: " 'Forget Time' ", First Community Prize of the FQXi "The nature of Time" Essay Contest. Foundations of Physics 41 (2011) 1475-1490, arXiv:0903.3832

183. C. Rovelli, "On the structure of a background independent quantum theory: Hamilton function, transition amplitudes, classical limit and continuous limit," arXiv:1108.0832. To appear on the proceedings of LOOP11.
184. C. Rovelli, "A critical look at strings," invited contribution to the Special Issue of "Foundations of Physics" titled "Forty Years Of String Theory: Reflecting On the Foundations, Foundations of Physics: Volume 43, Issue 1 (2013), Page 8-20. arXiv:1108.0868.
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189. C. Rovelli, "Kiefel's Quantum gravity" Class. Quantum Grav. 29 (2012) 179001.
190. C. Rovelli, "General relativistic statistical mechanics", Phys Rev D.87.084055, arXiv:1209.0065,
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192. H.M. Haggard, C. Rovelli, "Death and resurrection of the zeroth principle of thermodynamics" International Journal of Modern Physics D Vol. 22, No. 12 (2013) 1342007, arXiv:1302.0724
193. C. Rovelli, "Covariant loop gravity" Lect. Notes Phys. 863 (2013) 57-66.
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195. C. Rovelli, "History: Don't glorify Arab astronomy", Nature (letters) 499, 154 (2013).
196. F Vidotto and C. Rovelli, "Maximal acceleration in covariant loop gravity and singularity resolution", Physical Review Letters (editor's choice) 111 (2013) 091303. arXiv:1307.3228.
197. C. Rovelli, "Why Gauge?". arXiv:1308.5599. To appear on Foundations of Physics.
198. G. Chirco, H. Haggard and C. Rovelli, "Coupling and thermal equilibrium in general-covariant systems", Phys. Rev. D 88, 084027 (2013), arXiv:1309.0777.
199. C. Rovelli, "GPS observables in general relativity", Acta Futura 7 (2013) 97-101.
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202. C. Rovelli, "Relative information at the foundation of physics", FQXi second Prize, in *It from Bit or Bit from It? On Physics and information*, A Aguirre, B Foster and Z Merali eds., 79-86 (Springer 2015), e-Print: arXiv:1311.0054 .
203. C. Rovelli, "Aristotle's Physics: A Physicist's look", Journal of the American Philosophical Association, 1 (2015) 23-40 arXiv:1312.4057.
204. G. Chirco, H. Haggard, A. Riello, C. Rovelli, "Spacetime thermodynamics without hidden degrees of freedom", Phys. Rev. D 90, 044044 (2014) arXiv:1401.5262
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209. C. Rovelli, "La gravité quantique à boucles", in *Le monde quantique. Les débats philosophiques de la physique quantique*, B d'Espaçant, H Zwirn eds., pg 407 (Matériologiques, Paris 2014)
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212. G Chirco, C Rovelli, P Ruggiero, "Thermally correlated states in Loop Quantum Gravity" Physical Review D. arXiv:1408.0121.
213. C Rovelli, "Lorentzian Connes Distance, Spectral Graph Distance and Loop Gravity" arXiv:1408.3260
214. A Ashtekar, M Reuter and C Rovelli, "From General Relativity to Quantum Gravity", in *General Relativity and Gravitation: A Centennial Survey*, commissioned by the International Society for General Relativity and Gravitation (Cambridge University Press, 2015). arXiv:1408.4336
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216. C. Rovelli, "The Strange Equation of Quantum Gravity", Class. Quantum Grav. 32 (2015) 124005. arXiv:1506.00927.
217. C. Rovelli, "Why do we remember the past and not the future? The 'time oriented coarse graining' hypothesis" arXiv:1407.3384
218. Enrico Calloni, S Caprara, Martina De Laurentis, Giampiero Esposito, M Grilli, Ettore Majorana, G P Pepe, S Petrarca, P Puppo, F Ricci, Luigi Rosa, Carlo Rovelli, P Ruggi, N L Saini, Cosimo Stornaiolo, Francesco Tafuri, "The Archimedes project: a feasibility study for weighing the vacuum energy", arXiv:1409.6974
219. Seramika Ariwahjoedi, Jusak Sali Kosasih, Carlo Rovelli, Freddy P. Zen, " How many quanta are there in a quantum spacetime?", Class. Quantum Grav. 32 (2015) 165019. arXiv:1404.1750.
220. Marios Christodoulou, Carlo Rovelli, "How big is a black hole?", Phys. Rev. D 91, 064046 (2015), arXiv:1411.2854
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223. Carlo Rovelli, Francesca Vidotto "Compact phase space, cosmological constant, discrete time", arXiv:1502.00278
224. Seramika Ariwahjoedi, Jusak Sali Kosasih, Carlo Rovelli, Freddy P. Zen, "Curvatures and discrete Gauss-Codazzi equation in (2+1)-dimensional loop quantum gravity", International Journal of Geometric Methods in Modern Physics, to appear. arXiv:1503.05943.
225. Thibaut Josset, Goffredo Chirco, Carlo Rovelli, "Statistical mechanics of reparametrization invariant systems. Takes Three to Tango", arXiv:1503.08725.
226. Carlo Rovelli, "Is the Time Arrow Perspectival?", http://philsci-archive.pitt.edu/11443/
227. Carlo Rovelli, "Michelangelo's Stone: an Argument against Platonism in Mathematics", http://philsci-archive.pitt.edu/id/eprint/11595. arXiv:1508.00001.
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Invitations to international conferences

1. "The Hawking radiation conference", Stockholm, August 2015
2. "2nd Karl Schwarzschild meeting", Frankfurt, July 2015
3. "LOOP 2015", Erlangen, July 2015
4. "Problem of Time", Munich, July 2015
5. "100 years of General relativity", Penn State, June 2015
6. "Academy of Science celebration of 100 years of general relativity", Beijing, May 2015
7. "Conceptual Problems of Quantum Gravity", Santa Barbara, April 2015
8. "Spacetime theories", Jerusalem, January 2015

9. “Quantum Gravity Phenomenology”, Trieste, September 2014
10. “Quantum Gravity Approaches”, Rome, September 2014
11. “Covariant LQG”, Como school in theoretical physics, August 2014
12. ”Quantum Gravity” PSI, Perimeter Insititute
13. “Where is Quantum Gravity going?”, LOOP13, Toronto, July 2013.
14. “Public talk of GR”, GR20, Warsaw, July 2013.
15. “Time without Change”, Do we need a Physics of passage?, Capetown, December 2012.
16. “The status of covariant LQG”, Marcel Grossmann 13, Stockholm, July 21012.
17. “The state of the art in quantum gravity”, Aegean school in Gravitation, Naxos, Grece, August 2011.
18. “Covariant LQG”, IHES, Paris, October 2011.
19. “Loop Quantum Gravity”, Quantum Theory and Gravitation, Zurich, Switzerland, 14 - 24 June 2011.
20. “The covariant transition amplitues”, LOOPS-11, Madrid, Spain, 2011.
21. “Loop Quantum Gravity”, GR-19, Mexico City, Mexico, 23 - 28 May 2011
22. “Spin foams and LQG”, LOOPS 09, Beijing, China, August 2009
23. “A new look on Quantum Gravity”, Quantum gravity and non-commutative geometry, Department of Mathematics, La Sapienza, Rome, Italy, October 2008
24. “Loop Quantum Gravity”, STRINGS 08, Cern, Geneve, Switzerland, August 2008
25. “Relating spinfoams and LQG”, Quantum Gravity & Quantum Geometry, Nottingham,UK, July 2008
26. “LQG vertex”, LOOPS07, Morelia, Mexico, June 2007
27. “n-point functions in background independent QFT”, Gerard60, Conference in honor of G ‘t Hooft. Holand, July 2006
28. “Loop Quantum Gravity”, Le siècle d’Albert Einstein, July 2005, UNESCO, Paris.
29. “Graviton propagator without a background”, LOOPS 2005, October 2005, Potsdam, Germany.
30. “La Relatività”, Congresso della Società Italiana di Fisica, Novembre 2005, Catania, Italy.
31. “Quantum Gravity”, Physics 2005 A Century after Einstein, April 2005, Warwick, United Kingdom.
32. “Loop Quantum Gravity”, Spacetime in Action Mars 2005, Pavia, Italy.
33. “Extracting physical predictions from generally covariant quantum field theory”, Isham fest, Conference in honor of Chris Isham, London, September 2004
34. “Spinfoams and loops”, Mexican School on Gravitational Physics, Playa del Carmen, Mexico, October 2004.
35. “Loop Quantum Gravity”, SIGRAV Conferenza di relatività generale e fisica della gravitazione, Vietri, Settembre 2004
36. “Spinfoams”, International Conference on Quantum Gravity, Penn State University, Pensylvania, July 2003
37. “Conceptual problems in quantum gravity”, La philosophie de la nature aujourd’hui: les apports des mathématiques, de la physique et de la biologie, Paris, March 2003.
38. “Il Cambiamento nella Scienza”, La Genesi del Nuovo, Pisa November 2002
39. “Relational Quantum Theory”, QUO Vadis Quantum Mechanics? International Colloqium on the foundation of Quantum Theory, Temple University, Philadelphia, September 2002.
40. “Relativistic foundations of mechanics”, Topics in mathematical physics, general relativity and cosmology, Mexico City, September 17-20 2002.
41. “Gravity, Quantum, Time, Loops and Spin networks”, DICE 2002, Piombino, September 2002.
42. “Loop quantum gravity”, SIGRAV 15th Conference on General Relativity and Gravitational Physics Rome, September 2002.
43. “General Relativistic Mechanics and Statistical Mechanics”, Field Theory and Statistical Mechanics, Rome, June 2002.
44. “Quantum Gravity: the State of the Art”, 2001 A Spacetime Odissey, Florence, September 2001

45. "Spin Foams", GR16: International Conference on general Relativity and Gravitation, Durban, South Africa, July 2001.
46. "Spin foam models", 3rd Meeting on canonical quantum gravity, Warsaw, Poland June 2001.
47. "Loops", Seven Pines Symposium, Missouri, United States June 2001.
48. "La méchanique quantique de l'Espace-Temps", Invited lecture at the meeting "Un siècle après Planck", Académie des Sciences, Paris décembre 2000.
49. "On the history of Quantum Gravity", Invited lecture at the IX Marcell Grossman Meeting in Roma, July 2000.
50. "Spin foam models", Invited lecture at the IX Marcell Grossman Meeting in Roma, July 2000.
51. "The Dynamics of loop quantum gravity", Invited lecture at the Conference on Strong Gravitational Fields, ITP Santa Barbara, June 1999.
52. "Quantum Spacetime", Invited lecture at the American Physical Society meeting, Columbus, Ohio, April 1998
53. "Spin foam models", Invited lecture at the American Mathematical Society meeting, Baltimore, January 1998
54. "Quantum Gravity", Plenary Lecture at the GR15, Puna, India, December 1997
55. "Loops", Meeting on quantum gravity, Bangalore, December 1998
56. "Black hole entropy from loop quantum gravity", Marcel Grossman 8, Jerusalem, June 1997
57. "General relativity in terms of Dirac eigenvalues", Marcel Grossman 8, Jerusalem, June 1997
58. "The problem of time in quantum gravity", Invited talk at the "Marcel Grossman 8", Jerusalem, June 1997
59. "Spacetime Quantum Geometry", Invited speaker at the "2nd Workshop on Quantum Gravity", Warsaw, Poland, June 1997
60. "Black hole entropy from first principles", Plenary lecture at the International Conference on "Constrained systems and Quantum Gravity", Santa Margherita L igure, Italy, September 1996
61. "Recoupling theory in Quantum Gravity", Plenary lecture at the "Journeées Relativistes", Ascona, Switzerland, May 1995
62. "Is there any view of spacetime compatible with today's physics?", Invited speaker (panelist) at the 1996 International Fellows Conference of the Center for Philosophy of Science, Castiglioncello, May 1996
63. "Localization in Quantum Field Theory: Which aspects or Quantum Field Theory are compatible with what we know about spacetime?", Invited speaker at the 1996 Boston Colloquium for Philosophy of Science: "Reflections on the Foundations of Quantum Field theory", Boston Center for the Philosophy of Science, Boston, March 1996.
64. "The role of constrained systems theory in fundamental physics", Conference overview and closing remarks at the "Topical meeting on constrained systems and Quantum Gravity", Dubna, Russia, July 1995.
65. "Loop Representation, recent results", Invited plenary talk at the "Topical meeting on constrained systems and Quantum Gravity", Dubna, Russia, July 1995.
66. "Evolution in nonperturbative quantum gravity", 3 lectures
    Workshop on Canonical and Quantum Gravity, Stephen Banach Center of the Polish Academy of Sciences, Warsaw, Poland, May 1995.
67. "Hamilton-Jacobi theory for constrained systems and gauge invariant degrees of freedom in general relativity and Yang-Mills theory", "Constraint Theory and Quantization Methods", Siena, Italy August 1994. Proceedings: Eds F Colomo, L Lusanna G Marmo, page 401, World Scientific 1994
68. "Canonical Quantum General Relativity", Meeting on Quantum Gravity, Newton Institute, Cambridge, England, July 1994
69. "Half way through the woods", Center for the Philosophy of Science of the University of Pittsburgh, Lecture Annual Series, December 1993.
70. "A prediction from Quantum Gravity", IInd Texas/Pascos International conference on High-Energy Physics and Astrophysics, Berkeley, California, 12-16 December 1992

71. "A Physical Prediction from Quantum Gravity", Congresso nazionale di Relatività Generale e Fisica della Gravitazione, Bardonecchia, Italia, 2-5 September 1992
72. "The complete set of canonical diffeomorphism invariant observables of General Relativity", GR13, Cordoba, Argentina, 26-30 June 1992
73. "Time from Thermodynamics?", GR13, Cordoba, Argentina, 26-30 June 1992
74. "Canonical classical and quantum gravity", Series of lectures, Workshop on Gravitation, Cochin, India, December 1991
75. "Narada's Quest: Conceptual problems and present approaches to Quantum Gravity", International conference of Gravitation and Cosmology, Amedabhad, India, December 1991. Published in "Advances in gravitation and cosmology", eds B R Iyer, A R Prasanna R K Varma C V Vishveshwara, Wiley Eastern Ltd, New Delhi 1993
76. "Solutions of the Wheeler DeWitt equation", Journees Relativistes, Cargese, Corsica, May 1991
77. "Gravitoni e ricami", Congresso nazionale di Relatività Generale e Fisica della Gravitazione, Capri, Italia, September 1990
78. "Canonical Quantum Gravity", International Workshop on Gravitation, Banff, Canada, August 1990
79. "Holonomies and quantum gravity", Recent advances in general relativity, Pittsburgh, May 1990. Published in Recent advances in General Relativity, eds A I Janis and J R Porter, Birkhauser, Boston 1991
80. "Loop Representation in Quantum Gravity", 12th International Conference on General Relativity and Gravitation, Boulder, Colorado, July 1989
81. "Knots are fundamental states of quantum gravity", Twelfth John Hopkins workshop on current problems in high energy particle theory, Firenze 1989
82. "The Transform Approach to the Loop Representation", Italian Conference on General Relativity and Gravitation, Cavalese, Italy August 1988
83. "Is there incompatibility between the ways time is treated in general relativity and in standard quantum mechanics?", Osgood Hill conference on conceptual problems of quantum gravity, Boston 1988 Published in Conceptual problems of quantum gravity, op. cit.
84. "Loop representation in quantum gravity, the transform approach", Osgood Hill conference on conceptual problems of quantum gravity, Boston 1988 Published in "Conceptual problems of quantum gravity" Eds A Ashtekar and J Stachel (Birkhauser, New York, 1991)
85. "A new approach to quantum gravity", International conference on General Relativity and Cosmology, Goa, India 1987