Radu Ionicioiu

January 2021

CONTACT

Department of Theoretical Physics
Horia Hulubei National Institute of Physics and Nuclear Engineering
077125 Bucharest–Măgurele, Romania
+40 21 404 2300 ext. 3405
r.ionicioiu@theory.nipne.ro
https://web.theory.nipne.ro/index.php/rionicioiu-home

EDUCATION

05/2019 — **Habilitation** in Physics, **University of Bucharest** (2019)

10/1995 – 01/1999 — **PhD** theoretical physics, **University of Cambridge** (1999)
Department of Applied Mathematics and Theoretical Physics (DAMTP)
PhD thesis: *Topology in 3-dimensional Quantum Gravity*
supervisor: Dr Ruth M. Williams

10/1993 – 06/1994 — **Master of Mathematics** (Master of Advanced Study, Part III of the Mathematical Tripos), **University of Cambridge** (1994)
Department of Applied Mathematics and Theoretical Physics (DAMTP)

09/1986 – 06/1991 — **MSc** theoretical physics, **University of Bucharest**, Faculty of Physics (1991)
MSc thesis: *The Inflationary Model of the Early Universe* (10/10)

PROFESSIONAL EXPERIENCE

01/2013 – present — **Senior Researcher I**, Department of Theoretical Physics, Horia Hulubei National Institute of Physics and Nuclear Engineering, Bucharest, Romania

02/2014 – 11/2016 — **Senior Researcher I**, Research Center for Spatial Information CEOSpaceTech, University Politehnica of Bucharest, Romania

06/2011 – 09/2012 — **Research Assistant Professor**, **Institute for Quantum Computing**, University of Waterloo, Canada

03/2010 – 03/2011 — **Research Fellow**, **Macquarie University**, CQCT, Sydney, Australia

01/2007 – 10/2009 — **Research Fellow**, **Hewlett-Packard Labs**, Bristol, UK

07/2000 – 12/2006 — **Research Scientist** and **Senior Researcher** (from 2002), **Institute for Scientific Interchange (ISI)**, Torino, Italy

01/1999 – 06/2000 — **Postdoctoral Research Associate**, **University of Cambridge**, Engineering Department, UK

01/1995 – 10/1995 — **Research assistant**, **Institute of Gravitation and Space Sciences**, Bucharest, Romania

12/1992 – 09/1993 — **Research assistant**, **Research Institute for Informatics (ICI)**, Bucharest

AWARDS AND SCHOLARSHIPS

2014	**Dragomir Hurmuzescu** Prize of the Romanian Academy
2000	**Best Paper Award**, IEEE International Semiconductor Conference CAS 2000
1998 – 1999	**Fellow of Cambridge Philosophical Society**, Cambridge, UK
1998	**Taussky-Todd Scholarship**, Girton College, Cambridge
1997	**J.T. Knight Prize**, for the essay: *Building Blocks in Turaev-Viro Theory*, Cambridge
1995 – 1998	**ORS Award**, **Cambridge Overseas Trust Scholarship** and **Ratiu Foundation Fellowship** toward research for a PhD degree, University of Cambridge
1995	**Cambridge European Trust Honorary Scholar Award**, Cambridge
1993 – 1994	**Soros-Cambridge Scholarship** for study toward a Certificate of Advanced Studies in Mathematics (Part III of the Mathematical Tripos), University of Cambridge
1990	**JINR Dubna Scholarship**, Dubna, Russia
1990 – 1991	**Scholarship for Exceptional Merit**, University of Bucharest

PROFESSIONAL, TEACHING, FUNDRAISING, other

Strategic Advisory Board (SAB), EU Quantum Flagship, member (2019–)

EuroQCI Board, Sherpa member for Romania (2019–)

Quantum Community Network, member for Romania, EU Quantum Flagship (2018–2019)

founder of **RoQnet, Romanian Quantum Network** (2017)

member in the Management Committee of COST Action *Quantum Technologies in Space (QTSpace)*, CA15220

Grants: Project director, *Developing quantum information and quantum technologies in Romania* (QUTECH-RO), **€ 1.14 mil.**, UEFISCDI, 2018–

Patents: Co-author of 4 United States patents, Hewlett-Packard Labs (2009–2012)

Referee: Nature Physics, Nature Photonics, Nature Communications, Phys. Rev. (Lett., A, B), Appl. Phys. Lett., New J. Phys., Proc. Roy. Soc. A, J. Phys. A, Quantum Information Processing, Europhys. Lett.;
Project reviewer, Romanian Space Agency (ROSA) 2012–13

Membership: American Association for the Advancement of Science (AAAS) (2012–), American Physical Society (APS) (2011–2016)

Languages: English (fluent), Italian (fluent), French (good), Romanian (native)

Computing: Maple, Matlab/Octave, Maxima, Mathematica, LaTeX, Linux, C, Pascal, FORTRAN

h**-index= 17**, 1105 citations (1057 without self-citations)

RESEARCH INTERESTS

quantum information, quantum technologies, quantum computation, quantum communication, foundations of quantum mechanics, architectures for photonic quantum computing

PUBLICATIONS

1. A.E. Dragomir, C.G. Ivan, R. Ionicioiu, *Simulating integrated photonic gates using FDTD*, Quantum Sci. Technol. **5**, 045021 (2020); arXiv:2006.02946.

2. A.M. Pălici, T.A. Isdrailă, S. Ataman, R. Ionicioiu, *OAM tomography with Heisenberg-Weyl observables*, Quantum Sci. Technol. **5**, 045004 (2020); arXiv:2003.08668.

3. T.A. Isdrailă, C. Kusko, R. Ionicioiu, *Cyclic permutations for qudits in d dimensions*, Scientific Reports **9**, 6337 (2019); arXiv:1811.09059.

4. S. Ataman, A. Preda, R. Ionicioiu, *Phase sensitivity of a Mach-Zehnder interferometer with single-intensity and difference-intensity detection*, Phys. Rev. A **98**, 043856 (2018); arXiv:1811.02412.

5. B. Călin, M. Zamfirescu, R. Ionicioiu, N. Puşcaş, *Design of a novel integrated polarization beam splitter*, UPB Sci. Bull. A **80**, 237 (2018).

6. R. Ionicioiu, *Schrödinger's cat: where does the entanglement come from?*, Quanta **6**, 57 (2017); arXiv:1603.07986.

7. R. Ionicioiu, *Sorting quantum systems efficiently*, Scientific Reports **6**, 25356 (2016); arXiv:1512.01541.

8. R. Ionicioiu, *Quantum information and quantum technologies*, Rom. Rep. Phys. **67**, 1300 (2015).

9. R. Ionicioiu, R.B. Mann, D.R. Terno, *Determinism, Independence and Objectivity are Incompatible*, Phys. Rev. Lett. **114**, 060405 (2015); arXiv:1406.3963.

10. R. Ionicioiu, *Quantum mechanics: knocking at the gates of mathematical foundations*, in Romanian Studies in Philosophy of Science, I. Pârvu, G. Sandu and I.D. Toader (eds.), Springer Series: Boston Studies in the Philosophy and History of Science, Vol. 313 (2015), pg. 167-179; arXiv:1506.04511.

11. R. Ionicioiu, T. Jennewein, R.B. Mann, D.R. Terno, *Is wave-particle objectivity compatible with determinism and locality?*, Nature Communications **5**, 4997 (2014); arXiv:1211.0979.

12. L.C. Céleri, R.M. Gomes, R. Ionicioiu, T. Jennewein, R.B. Mann, D.R. Terno, *Quantum control in foundational experiments*, Foundations of Physics **44**, 576 (2014); arXiv:1301.6969.

13. R. Ionicioiu, T.P. Spiller, *Encoding graphs into quantum states: an axiomatic approach*, Phys. Rev. A **85**, 062313 (2012); arXiv:1110.5681.

14. R. Ionicioiu, D.R. Terno, *Proposal for a Quantum Delayed-Choice Experiment*, Phys. Rev. Lett. **107**, 230406 (2011); arXiv:1103.0117.

    Physics Focus story: http://physics.aps.org/articles/v4/102

15. R. Ionicioiu, W.J. Munro, *Constructing 2D and 3D cluster states with photonic modules*, Int. J. Quantum Information **8**, 149 (2010); arXiv:0906.1727.

16. R. Ionicioiu, T.P. Spiller, W.J. Munro, *Generalized Toffoli gates using qudit catalysis*, Phys. Rev. A **80**, 012312 (2009); arXiv:0903.4123.

17. R. Ionicioiu, A.E. Popescu, W.J. Munro, T.P. Spiller, *Generalized parity measurements*, Phys. Rev. A **78**, 052326 (2008); arXiv:0806.0982.

18. S.J. Devitt, A.D. Greentree, R. Ionicioiu, J.L. O'Brien, W.J. Munro, L.C.L. Hollenberg, *Photonic module: An on-demand resource for photonic entanglement*, Phys. Rev. A **76**, 052312 (2007); arXiv:0706.2226.

19. M. Cozzini, R. Ionicioiu, P. Zanardi, *Quantum fidelity and quantum phase transitions in matrix product states*, Phys. Rev. B **76**, 104420 (2007); cond-mat/0611727.

20. R. Ionicioiu, *Entangling spins by measuring charge: a parity-gate toolbox*, Phys. Rev. A **75**, 032339 (2007); quant-ph/0609118.

21. R. Ionicioiu, *The parity gate: from quantum networks to entanglement generation*, Int. J. Quantum Information **5**, 3 (2007).

22. R. Ionicioiu, *Spintronic devices as quantum networks*, Laser Physics **16**, 1444 (2006), Special Issue on Quantum Information; quant-ph/0512116.

23. A. Hamma, R. Ionicioiu, P. Zanardi, *Quantum entanglement in states generated by bilocal group algebras*, Phys. Rev. A **72**, 012324 (2005); quant-ph/0504049.

24. A. Hamma, R. Ionicioiu, P. Zanardi, *Bipartite entanglement and entropic boundary law in lattice spin systems*, Phys. Rev. A **71**, 022315 (2005); quant-ph/0409073.

25. A. Hamma, R. Ionicioiu, P. Zanardi, *Ground state entanglement and geometric entropy in the Kitaev's model*, Phys. Lett. A **337**, 22 (2005); quant-ph/0406202.

26. R. Ionicioiu, A.E. Popescu, *Single-spin measurement using spin-orbital entanglement*, New J. Phys. **7**, 120 (2005); quant-ph/0310047.

27. A.E. Popescu, R. Ionicioiu, *All-electrical quantum computation with mobile spin qubits*, Phys. Rev. B **69**, 245422 (2004); cond-mat/0306401.

28. R. Ionicioiu, I. D'Amico, *An interferometric spin-polarizing device*, Semiconductor Science and Technology **19**, S418 (2004).

29. R. Ionicioiu, *Quantum gates with topological phases*, Phys. Rev. A **68**, 034305 (2003); quant-ph/0304199.

30. R. Ionicioiu, I. D'Amico, *Mesoscopic Stern-Gerlach device to polarize spin currents*, Phys. Rev. B **67**, 041307(R) (2003); cond-mat/0207533.

31. R. Ionicioiu, P. Zanardi, *Quantum-information processing in bosonic lattices*, Phys. Rev. A **66**, 050301(R) (2002); quant-ph/0204118.

32. A. Bertoni, R. Ionicioiu, P. Zanardi, F. Rossi and C. Jacoboni, *Simulation of entangled electronic states in semiconductor quantum wires*, Physica B **314**, 10 (2002).

33. P. Zanardi, I. D'Amico, R. Ionicioiu, E. Pazy, E. Biolatti, R.C. Iotti, and F. Rossi, *Quantum information processing using semiconductor nanostructures*, Physica B **314**, 1 (2002).

34. F. Rossi, E. Biolatti, R.C. Iotti, I. D'Amico, R. Ionicioiu, E. Pazy, and P. Zanardi, *Entanglement of excitonic states and quantum information processing in semiconductors*, Physica Status Solidi (a) **190**, 817 (2002).

35. E. Biolatti, I. D'Amico, R. Ionicioiu, P. Zanardi, and F. Rossi, *Ultrafast quantum information processing in nanostructured semiconductors*, Superlattices and Microstructures **31**, 107 (2002).

36. R. Ionicioiu, P. Zanardi, and F. Rossi, *Testing Bell's Inequality with ballistic electrons in semiconductors*, Phys. Rev. A **63**, 050101(R) (2001); quant-ph/0009026.

37. R. Ionicioiu, G. Amaratunga, and F. Udrea, *Quantum computation with ballistic electrons*, International Journal of Modern Physics B **15**, 125 (2001); quant-ph/0011051.

38. R. Ionicioiu and R.M. Williams, *Lens spaces and handlebodies in three-dimensional quantum gravity*, Classical and Quantum Gravity **15**, 3469 (1998); gr-qc/9806027.

39. R. Ionicioiu, *Amplitudes for topology change in Turaev-Viro theory*, Classical and Quantum Gravity **15**, 1885 (1998).

40. R. Ionicioiu, *On a periodic iterative mapping* (in Romanian), Rev. Rom. Informatică & Automatică, vol. **3**, no. 3, 71 (1993).

CONFERENCE PROCEEDINGS

41. V.-L. Dosan, M. Mihailescu, N. Tarba, M.-A. Ungureanu, R. Ionicioiu, *Quantum random number generation with down converted photon pairs*, Proc. SPIE 11718, Advanced Topics in Optoelectronics, Microelectronics and Nanotechnologies X, 117180S (2020).

42. A. Hamma, R. Ionicioiu, and P. Zanardi, *Group theoretic methods, entanglement, area law*, Proceedings of ERATO conference on Quantum Information Science (EQIS 2005), August 26-30, 2005, Tokyo.

43. R. Ionicioiu, A. Hamma, and P. Zanardi, *Entanglement, area law and group theory*, in Quantum Information Processing: From Theory to Experiment, D.G. Angelakis, M. Christandl, A. Ekert, A. Kay and S. Kulik (Eds.), IOS Press 2006, pp. 175-179 (Proceedings of the NATO ASI, Quantum Computation and Information QCI 2005, 2-13 May 2005 Chania, Crete, Greece).

44. R. Ionicioiu, G. Amaratunga, A. Popescu, and F. Udrea, *Quantum computation with ballistic qubits*, IEEE International Semiconductor Conference, CAS 2000 Proceedings, 10-14 October 2000, Sinaia, Romania (Best Paper Award).

DISSERTATIONS

1. R. Ionicioiu, *Quantum information – turning paradoxes into future technologies*, Habilitation Thesis, Faculty of Physics, University of Bucharest, June 2017.

2. R. Ionicioiu, *Topology in 3-dimensional Quantum Gravity*, PhD Thesis, DAMTP, Cambridge, January 1999.

3. R. Ionicioiu, *The Inflationary Model of the Early Universe*, MSc Dissertation, Faculty of Physics, University of Bucharest, June 1991.

PATENTS

1. J. Duligall, K. Harrison, W. Munro, T. Spiller, R. Ionicioiu, *QKD System alignment*, US 2009/0310784 A1

2. K. Harrison, W. Munro, T. Spiller, M. Tan, J. Duligall, R. Ionicioiu, *QKD Transmitter and transmission method*, US 8,170,214 B2

3. J. Duligall, T. Spiller, R. Ionicioiu, R. Beausoleil, D. Fattal, *Photonic quantum system alignment using multiple beams*, US 8,774,638 B2

4. D. Fattal, R. Beausoleil, J. Duligall, R. Ionicioiu, *Beam direction sensor*, US 9,494,419 B2

REPORTS (unpublished)

1. R. Ionicioiu, *Beam-splitters don't have memory: a comment on "Event-based corpuscular model for quantum optics experiments" by K.Michielsen et al.*, arXiv:1012.0647.

2. R. Ionicioiu, G. Amaratunga, and F. Udrea, *Ballistic single-electron quputer*, quant-ph/9907043.

3. R. Ionicioiu, *Building blocks for topology change in 3D*, DAMTP-1997-127, gr-qc/9711069.

4. R. Ionicioiu, *Topology change from Kaluza-Klein dimensions*, DAMTP-1997-105, gr-qc/9709057.

5. R. Ionicioiu, *Building blocks in Turaev-Viro Theory*, DAMTP-1996-94, gr-qc/9611024.

6. R. Ionicioiu and Dan Şelaru, *A strange solution of vacuum Einstein equations*, Report IGSS/95.

7. R. Ionicioiu, *An algorithm for the reconstruction of the 3D structure of proteins*, I.C.I. Technical Report, GeMaSoft Laboratory, September 1993.

8. R. Ionicioiu and A. Ioniţă, *Reconstruction of the 3D structure of proteins*, I.C.I. Technical Report, GeMaSoft Laboratory, June 1993.

INVITED AND CONTRIBUTED TALKS

1. *Quantum technologies in Romania*, 2019 QUAPITAL Summer School, Bratislava, 3 October 2019
2. *Putting quantum into nanotechnology*, EuroNanoForum 2019, Bucharest, 13 June 2019
3. *Quantum technologies in Romania: a status report*, ESA ScyLight Workshop, Bucharest, 5 June 2019
4. *The future is Quantum*, TechFest Bucharest, 20 September 2018
5. *From quantum paradoxes to quantum technologies*, CETAL Workshop, 17 July 2018
6. *Future quantum technologies*, National Institute for Microtechnologies, Bucharest, 16 March 2017
7. *Quantum technologies 2.0*, Quantum Optics and Quantum Imaging Summer School, Bucharest, 4-6 July 2016
8. *Quantum light: mysteries, paradoxes and future technologies*, Lights of the World, IYL2015 Conference, Bucharest, 30 October 2015
9. *The second Quantum Revolution: from paradoxes to 21st century technology*, Buşteni Summer School, 24 July 2015
10. *A quantum leap for technology*, Quantum Imaging and Quantum Metrology Summer School, Bucharest, 1-3 July 2015
11. *Quantum: technologies for the 21st century*, Faculty of Electronics, Bucharest, April 2015
12. *Complementarity: from wave-particle duality to delayed-choice experiments*, Faculty of Philosophy, Bucharest, October 2014
13. *A quantum delayed-choice experiment*, Advanced many-body and statistical methods in mesoscopic systems, Braşov, 1-5 September 2014
14. *Quantum information: turning paradoxes into technologies*, Quantum Information and Quantum Technologies Summer School, Bucharest, 2-4 July 2014
15. *Encoding graphs into quantum states: an axiomatic approach*, DFT, IFIN-HH, Bucharest, October 2013
16. *Misterele lumii cuantice*, Bucharest Science Festival, 26 September 2013
17. *Quantum technologies: launching the second quantum revolution*, New Trends in Nanophysics, INFM Workshop, Bucharest, September 2013
18. *a quantum kōan*, **TEDxCERN@IFIN-HH**, Bucharest, 17 May 2013
https://www.youtube.com/watch?v=stsJaW3H-SA
19. *Entangling by measurement: the generalized parity box*, DFT Quantum Information Workshop, Bucharest, April 2013
20. *Quantum information: turning paradoxes into technology*, IFIN-HH, March 2013
21. *Quantum information: turning paradoxes into technology*, Politechnica University Bucharest, February 2013

22. *Einstein, Wheeler, Bohr: from classical to quantum delayed-choice*, DFT, IFIN-HH, Bucharest, September 2012

23. *Encoding graphs into quantum states: an axiomatic approach*, IQC, Waterloo, September 2012

24. *Is classical set theory compatible with quantum experiments?*, Perimeter Institute, Waterloo, April 2012; http://pirsa.org/displayFlash.php?id=12040107

25. *A quantum delayed-choice gedanken experiment*, APS March Meeting, Boston, March 2012

26. *Einstein, Wheeler, Bohr: from classical to quantum delayed-choice*, IQC, Waterloo, September 2011

27. *From graphs to quantum states (...and hopefully back)*, Macquarie University, Sydney, August 2010

28. *From photonics to quantum photonics: towards an optical QIP chip*, Macquarie University, Sydney, June 2010

29. *From graphs to quantum states (...and hopefully back)*, University of Leeds, January 2010

30. *Generalized parity measurements: an entanglement resource*, University of Waterloo, October 2009

31. *Putting Quantum into Photonics: towards an optical QIP chip*, IQC, Waterloo, October 2009

32. *Efficient preparation of 2D and 3D clusters*, Quantum Photonics Workshop, Bristol, September 2009

33. *Mapping graphs to quantum states*, ISI Torino, Italy, July 2009

34. *From graphs to quantum states*, University of Hertfordshire, Hatfield, UK, March 2009

35. *Generalized parity module: an entanglement resource*, QUOXIC Workshop, Oxford, December 2008

36. *Generalized parity measurements*, University of Southern California, Los Angeles, September 2008

37. *Towards an optical QIP chip*, Hewlett-Packard Labs, Palo Alto, September 2008

38. *Entangling with parity measurements*, National Institute of Informatics, Tokyo, April 2008

39. *QIP with topological effects: a tale of spin, charge and qubits*, HP QIP meeting, Bristol, September 2007

40. *Entangling spins by measuring charge: A parity gate toolbox*, International Workshop on "Measurement-based quantum computing (MBQC)", Oxford, March 2007

41. *Entangling spins by measuring charge*, Workshop on "Advances in Foundations of Quantum Mechnics", Torino, Italy, May 2006

42. *Groups n' states (and some entanglement)*, TOPQIP-05 Workshop, Torino, Italy, July 2005

43. *Zen and the art of entanglement (entanglement in lattice spin systems)*, TOPQIP-04 Workshop, Torino, Italy, June 2004

44. *Quantum gates with topological phases*, TOPQIP-04 Workshop, Torino, Italy, June 2004

45. *Single spin measurement using spin-orbital entanglement*, SSQIP Conference, Amsterdam, December 2003

46. *Quantum information processing in bosonic lattices*, Istituto Galileo Ferraris, Torino, Italy, November 2003

47. *Spintronic devices as quantum gates*, ISI Workshop, Torino, Italy, February 2003

48. *Anyons, topology and knots: a link to entanglement?*, ISI Torino, Italy, December 2002

49. *Quantum computation in ballistic quantum wires*, Engineering Department, Cambridge, June 2001
50. *Testing Bell's inequality with ballistic electrons*, ISI workshop, Torino, Italy, June 2001
51. *Quantum entanglement: how to do it with ballistic electrons*, ISI Torino, Italy, January 2001
52. *Quantum computation: some like it entangled*, Università di Modena, Italy, December 2000
53. *QC with ballistic electrons*, Cavendish Laboratory, Cambridge, January 2000
54. *Solid state implementations of quantum gates*, Isaac Newton Institute, Cambridge, July 1999
55. *A gentle introduction to quantum computation*, Engineering Department, Cambridge, March 1999
56. *Topology change in 3D – in the search for the building blocks*, Workshop on "New directions in simplicial quantum gravity", Santa Fe, July 1997
57. *Building blocks in Turaev-Viro theory*, DAMTP, Cambridge, 1996

PROFESSIONAL ACTIVITIES

1. Organizer, *Quantum Optics and Quantum Imaging* Summer School, Bucharest, 4-6 July 2016
2. Organizer, *Quantum Imaging and Quantum Metrology* Summer School, Bucharest, 1-3 July 2015
3. Organizer, *Quantum Information and Quantum Technologies* Summer School, Bucharest, 2-4 July 2014

MEDIA

PRINT

1. *Time travel and the single atom*, in **Cosmos Magazine**, 22 June 2015
   https://cosmosmagazine.com/physical-sciences/time-travel-and-single-atom
2. *Quantum shadows*, cover story in **New Scientist**, 5 January 2013
   http://bit.ly/1NTxqMP
3. *Le photon défie toujours l'intuition*, **Le Monde**, 1 November 2012; article discussing our *gedanken-experiment* and its implementation
   http://bit.ly/1N2iTM5

TV

1. Invited guest on *Ora de stiri* discussing the discovery of gravitational waves, TVR 2, 12 February 2016

RADIO

1. *De ce Romania trebuie sa fie pe "harta cuantica" mondiala*, Cafeneaua de Ştiinţă, Radio România Cultural, 4 Februarie 2019
2. *Secolul marilor confirmari*, Cafeneaua de Ştiinţă, radio talk-show on Radio România Cultural, 5 March 2018
3. *Quantum Europe*, invited guest on the radio show *Lumea în care vom trăi*, Radio România Cultural, 6 June 2016
4. *Our quantum future*, invited guest on the radio show *Lumea în care vom trăi*, Radio România Cultural, 1st February 2016

5. *Quantum technologies*, invited guest on the radio show *Lumea în care vom trăi*, Radio România Cultural, 14 July 2014

6. *Fizica marilor concepte, fizicienii marilor idei*, Cafeneaua de Ştiinţă, radio talk-show on Radio România Cultural, 6 January 2014

7. *Born in Romania*, interview on Radio România Cultural, 4 June 2013

8. *Philosophical challenges of the quantum world*, invited guest on the radio show *Izvoare de filosofie*, Radio România Cultural, 3 November 2012

9. Interviews on *Radio România Actualităţi* and *Radio România Cultural* discussing the 2012 Nobel Prize for Physics, 9-10 October 2012