

**From:** Angelo Bassi [bassi@ts.infn.it](mailto:bassi@ts.infn.it)  
**Subject:** COST Action CA15220: New MC member from Belgium (eVote)  
**Date:** 24 August 2020 at 16:04



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To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"  
Cc: Substitute Members and Observers

**Subject: New MC member from Belgium (eVote)**

Dear Friends and Colleagues,

the Belgian COST CNC wrote to me, asking to consider the application of Dr. Ward Struyve from KU Leuven, as new MC member of QTSpace. Currently Belgium is not part of our network. I am very happy to support his application, and although we are not far away from the end of the Action, it is good that the network keeps growing. Attached is Dr. Struyve's CV.

I am writing for your approval. As usual, no reply means that you accept.

**Deadline for voting: Monday 31st August 2020.**

Thank you and kind regards,  
Angelo



cv.pdf

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# Curriculum Vitae

Ward Struyve

## Personal information:

- Date of birth: 31 August 1978
- Nationality: Belgian
- Work address:  
Celestijnenlaan 200d - bus 2415, 3001 Leuven, Belgium
- Office phone: +32 16 372470
- Cell phone: +32 479 928433
- E-mail: [ward.struyve@gmail.com](mailto:ward.struyve@gmail.com)
- Home page: <http://itf.fys.kuleuven.be/ward/>

## Academic positions:

- 1 January 2017 - present: Postdoctoral Fellow, Institute of Philosophy & Institute for Theoretical Physics, K.U.Leuven, Leuven, Belgium.
- 1 October 2015 - 31 December 2017: Postdoctoral Fellow DFG, Department of Mathematics, Ludwig Maximilian University, Munich, Germany.
- 1 October 2014 - 30 September 2015: Postdoctoral Fellow, Department of Physics, University of Liege, Liege, Belgium.
- 1 October 2012 - 30 September 2014: Postdoctoral Fellow ‘Philosophy of cosmology’, Department of Philosophy & Department of Mathematics, Rutgers University, New Brunswick, USA.
- 1 October 2011 - 30 September 2012: Postdoctoral Fellow, Institute for Theoretical Physics, K.U.Leuven, Leuven, Belgium.
- 1 October 2008 - 30 September 2011: Postdoctoral Fellow FWO, Institute for Theoretical Physics & Institute of Philosophy, K.U.Leuven, Leuven, Belgium.
- 1 December 2004 - 30 September 2008: Postdoctoral Fellow, Perimeter Institute, Waterloo, Canada.

## Education:

- 1 January 2020 - present: PhD student philosophy, Institute of Philosophy KU Leuven, Leuven, Belgium..
- 1 October 2000 - 30 November 2004: Ph.D. in Physics, University of Ghent, Ghent, Belgium.  
Thesis title: ‘The de Broglie-Bohm pilot-wave interpretation of quantum theory’, arXiv:quant-ph/0506243
- October 1996 - July 2000: Degree in Mathematics (mathematical physics and astronomy) equivalent to M.Sc., University of Ghent, Ghent, Belgium.  
Dissertation title: ‘Gribov-problem and confinement’

## Grants:

- Postdoctoral grant DFG, Germany, 2015-2017.
- CNPq travel grant to visit CBPF for a month, Rio de Janeiro, Brazil (2014).
- Travel grant of 1920 Euro for ‘COST - Short term scientific mission’ to UNAM, Mexico City, Mexico (2013).
- COST action of the European Science Foundation entitled: ‘Fundamental Problems in Quantum Physics’ (which amounts to a grant of roughly 100.000 Euro a year, 2010-2014), with various researchers in Europe, under the lead of Angelo Bassi. I was the deputy chair for the workgroup ‘Quantum theories without observers’.
- CNPq travel grant to visit CBPF for a month, Rio de Janeiro, Brazil (2011).
- Postdoctoral grant FWO-Flanders, Belgium, 2008-2011.

## Publications in peer review journals:

1. W. Struyve, W. De Baere, J. De Neve and S. De Weirtdt, ‘Comment on ‘Bohmian prediction about a two double-slit experiment and its disagreement with standard quantum mechanics’’, *J. Phys. A: Math. Gen.* **36** (5), 1525-1530 (2003).
2. W. Struyve, W. De Baere, J. De Neve and S. De Weirtdt, ‘On the uniqueness of paths for spin-0 and spin-1 quantum mechanics’, *Phys. Lett. A* **322** (1-2), 84-95 (2004); arXiv:quant-ph/0311098.
3. W. Struyve, W. De Baere, J. De Neve and S. De Weirtdt, ‘Peres’ statement “opposite momenta lead to opposite directions”, decaying systems and optical imaging’, *Found. Phys.* **34** (6), 963-985 (2004); arXiv:quant-ph/0401095.
4. S. Colin and W. Struyve, ‘A Dirac sea pilot-wave model for quantum field theory’, *J. Phys. A: Math. Theor.* **40** (26), 7309-7341 (2007); arXiv:quant-ph/0701085.

5. S. Goldstein and W. Struyve, ‘On the Uniqueness of Quantum Equilibrium in Bohmian Mechanics’, *J. Stat. Phys.* **128** (5), 1197-1209 (2007); arXiv:0704.3070 [quant-ph].
6. W. Struyve and H. Westman, ‘A minimalist pilot-wave model for quantum electrodynamics’, *Proc. Roy. Soc. A* **463**, 3115-3129 (2007); arXiv:0707.3487 [quant-ph].
7. W. Struyve and A. Valentini, ‘De Broglie-Bohm Guidance Equations for Arbitrary Hamiltonians’, *J. Phys. A: Math. Theor.* **42**, 035301 (2009); arXiv:0808.0290 [quant-ph].
8. S. Colin and W. Struyve, ‘Quantum non-equilibrium and relaxation to equilibrium for a class of de Broglie-Bohm-type theories’, *New J. Phys.* **12**, 043008 (2010); arXiv:0911.2823 [quant-ph].
9. W. Struyve, ‘On Epstein’s trajectory model of quantum theory’, *Found. Phys.* **40**, 1700-1711 (2010); arXiv:0907.5373 [quant-ph].
10. W. Struyve, ‘Pilot-wave theory and quantum fields’, *Rep. Prog. Phys.* **73**, 106001 (30pp) (2010); arXiv:0707.3685 [quant-ph].
11. W. Struyve, ‘Gauge invariant accounts of the Higgs mechanism’, *Stud. Hist. Phil. Mod. Phys.* **42**, 226-236 (2011); arXiv:1102.0468 [physics.hist-ph].
12. N. Pinto-Neto, G. Santos and W. Struyve, ‘Quantum-to-classical transition of primordial cosmological perturbations’, *Phys. Rev. D* **85**, 083506 (2012); arXiv:1110.1339 [gr-qc].
13. W. Struyve, ‘On the zig-zag pilot-wave approach for fermions’, *J. Phys. A: Math. Theor.* **45**, 195307 (2012); arXiv:1201.4169v1 [quant-ph].
14. T. Norsen and W. Struyve, ‘Weak Measurement and (Bohmian) Conditional Wave Functions’, *Ann. Phys.* **350**, 166178 (2014); arXiv:1305.2409 [quant-ph].
15. D. Dürr, S. Goldstein, T. Norsen, W. Struyve and N. Zanghì, ‘Can Bohmian mechanics be made relativistic?’, *Proc. Roy. Soc. A* **470**, 20130699 (2014); arXiv:1307.1714 [quant-ph].
16. N. Pinto-Neto, G. Santos and W. Struyve, ‘Quantum-to-classical transition of primordial cosmological perturbations in de Broglie-Bohm quantum theory: the bouncing scenario’, *Phys. Rev. D* **89**, 023517 (2014); arXiv:1309.2670 [gr-qc].
17. W. Struyve and R. Tumulka, ‘Bohmian trajectories for a time foliation with kinks’, *Journal of Geometry and Physics* **82**, 75-83 (2014); arXiv:1311.3698 [quant-ph].
18. S. Goldstein and W. Struyve, ‘On quantum potential dynamics’, *J. Phys. A: Math. Theor.* **48**, 025303 (2015); arXiv:1312.1990 [quant-ph].

19. F.T. Falciiano, N. Pinto-Neto and W. Struyve, ‘Wheeler-DeWitt quantization and singularities’, *Phys. Rev. D* **91**, 043524 (2015); arXiv:1501.04181 [gr-qc].
20. W. Struyve and R. Tumulka, ‘Bohmian mechanics for a degenerate time foliation’, *Quantum Stud.: Math. Found.* **2**, 349358 (2015); arXiv:1505.02844 [quant-ph].
21. W. Struyve, ‘Semi-classical approximations based on Bohmian mechanics’, *Int. J. Mod. Phys. A* **35**, 2050070 (2020); arXiv:1507.04771 [quant-ph].
22. A. Cesa, J. Martin and W. Struyve, ‘Chaotic Bohmian trajectories for stationary states’, *J. Phys. A: Math. Theor.* **49** 395301 (2016); arXiv:1603.01387 [quant-ph].
23. W. Struyve, ‘Loop quantum cosmology and singularities’, *Scient. Rep.* **7**, 8161 (2017); arXiv:1703.10274 [gr-qc].
24. R. Dubertrand, J.-B. Shim and W. Struyve, ‘Bohmian trajectories for the half-line barrier’, *J. Phys. A: Math. Theor.* **51**, 085302 (2018); arXiv:1707.06173 [quant-ph].
25. T. Demaerel, C. Maes and W. Struyve, “Cosmic acceleration from quantum Friedmann equations”, *Class. Quantum Grav.* **37** 085006 (2020); arXiv:1901.09767 [gr-qc].
26. T. Demaerel and W. Struyve, “Elimination of cosmological singularities in quantum cosmology by suitable operator orderings”, *Phys. Rev. D* **100**, 046008 (2019) and arXiv:1904.09244 [gr-qc].
27. D. Dürr and W. Struyve, “Quantum Einstein equations”, *Class. Quantum Grav.* **37**, 135002 (2020) ; arXiv:2003.03839 [gr-qc].
28. W. Struyve, “Time-reversal invariance and ontology”, submitted to *Brit. J. Philos. Sci.*; <http://philsci-archival.pitt.edu/17682/> (2020).

**Book contributions:**

29. W. Struyve, ‘Towards a novel approach to semi-classical gravity’, *The Philosophy of Cosmology*, eds. K. Chamcham, J. Silk, J.D. Barrow and S. Saunders, Cambridge University Press, Cambridge (2017).
30. S. Goldstein, W. Struyve and R. Tumulka, ‘The Bohmian Approach to the Problem of Cosmological Quantum Fluctuations’, for *Guide to the Philosophy of Cosmology*, eds. A. Ijjas and B. Loewer; arXiv:1508.01017 [gr-qc].
31. N. Pinto-Neto and W. Struyve, ‘Bohmian quantum gravity and cosmology’, in *Applied Bohmian Mechanics: From Nanoscale Systems to Cosmology*, 2nd edition, eds. X. Oriols and J. Mompart, 607-656 (2019); arXiv:1801.03353 [gr-qc].

32. D. Dürr and W. Struyve, “Typicality in the foundations of statistical physics and Born’s rule”, to appear in ”Do wave functions jump? Perspectives on the work of GC Ghirardi”, eds.: V. Allori, A. Bassi, D. Dürr and N. Zanghì; Springer International Publishing and arXiv:1910.08049 [quant-ph].

#### **Publications in conference proceedings:**

33. W. Struyve and W. De Baere, “Comments on some recently proposed experiments that should distinguish Bohmian mechanics from quantum mechanics”, in conference proceedings: “Quantum theory: Reconsideration of Foundations: Växjö, Sweden, 17-21 June 2001”, p. 355; arXiv:quant-ph/0108038.
34. W. Struyve and H. Westman, ‘A new pilot-wave model for quantum field theory’, in “Quantum Mechanics: Are there Quantum Jumps? and On the Present Status of Quantum Mechanics”, eds. A. Bassi, D. Dürr, T. Weber and N. Zanghì, *AIP Conference Proceedings* **844**, 321-339 (2006); arXiv:quant-ph/0602229.
35. W. Struyve, ‘Pilot-wave approaches to quantum field theory’, *J. Phys.: Conf. Series* **306** 012047 (2011); arXiv:1101.5819 [quant-ph].
36. G.B. Santos, N. Pinto-Neto and W. Struyve, ‘The Bohmian Evolution of Primordial Perturbations’, The Thirteenth Marcel Grossmann Meeting: On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics and Relativistic Field Theories, eds. K. Rosquist, R.T. Jantzen, 1628-1630 (2015).

#### **Reviews:**

37. Review of P.J. Riggs, “Quantum Causality: Conceptual Issues In The Causal Theory Of Quantum Mechanics”, Springer (2009); ‘The Causal Theory revisited’, *Metascience* **19**, 243-246 (2010).
38. Review of R. Healey, “Gauging What’s Real: The Conceptual Foundations of Contemporary Gauge Theories”, Oxford University Press (2007); *Notre Dame Philosophical Reviews*, 2010.04.13 (2010)
39. Review of M. Bell and S. Gao (eds.), “Quantum Nonlocality and Reality: 50 Years of Bell’s Theorem”, Cambridge University Press (2016); *Notre Dame Philosophical Reviews*, 2018.07.36 (2016)

#### **Popularisation:**

40. W. Struyve, “Quelle réalité cache la mécanique quantique”, cover article *Pour la Science* **509**, mars 2020.

#### **Other writings:**

41. G. Belot, J. Earman, R. Healey, T. Maudlin, A. Nounou, W. Struyve, “Synopsis and Discussion: Philosophy of Gauge Theory”; philsci-archive 4728.

### Reports about my work:

- M. Buchanan, “Quantum Randomness May Not Be Random”, *New Scientist* **2648** (2008).

### Conferences:

- Quantum Theory: Reconsideration of Foundations: Växjö, Sweden, 17-21 June 2001; talk: ‘Comments on some recently proposed experiments that should distinguish Bohmian mechanics from quantum mechanics’
- International Conference on Quantum Information. Conceptual Foundations, Developments and Perspectives: Oviedo, Spain, 13-18 July 2002
- Quantum Theory Without Observers II: Bielefeld, Germany, 2-6 February 2004
- Are there Quantum Jumps?: Trieste, Italy, 5 September 2005
- On the Present Status of Quantum Mechanics: Mali Losinj, Croatia 7-9 September 2005; talk: ‘A pilot-wave model for quantum field theory’
- Constrained Dynamics and Quantum Gravity 05: Cala Gonone, Sardinia, 12-16 September 2005
- Quantum Reality, Relativistic Causality, and Closing the Epistemic Circle: An International Conference in Honour of Abner Shimony: Perimeter Institute, Waterloo, Canada: 18-21 July 2006
- Decoherence, Quantum Measurement and the Arrow of Time: Beuggen, Germany, 10-14 September 2006; talk: ‘De Broglie-Bohm theory and effective collapse’
- New Directions in the Foundations of Physics: Washington, USA, April 13-15, 2007
- Operational Quantum Physics and the Quantum-Classical Contrast: Perimeter Institute, Waterloo, Canada, 4-7 June 2007
- FQM Quantum Reality: Ontology, Probability, Relativity: Rutgers, USA, 6-9 October 2007; ‘Recent developments in the de Broglie-Bohm approach to quantum field theory’ (keynote speaker)
- PIAF Workshop in Quantum Foundations: Sydney, Australia, 1-3 February 2008; talk: ‘De Broglie-Bohm theory and quantum field theory’
- The Clock and the Quantum: Time in Quantum Foundations: Perimeter Institute, Waterloo, Canada, 28 September - 2 October 2008
- Foundations of Quantum Mechanics: Utrecht University, Utrecht, the Netherlands, 28 October 2008

- Philosophy of Gauge Theory: University of Pittsburgh, Pittsburgh, USA, 18-19 April 2009; talk: ‘Spontaneous Symmetry Breaking and the Higgs Mechanism’ (keynote speaker); panel discussion ‘New and Important Problems’
- Quantum Mechanics and the nature of Physical reality: Sexten (Bozen), Italy, 22-30 July 2009; talk: ‘Bohmian mechanics and quantum equilibrium’
- PIAF ’09 New Perspectives on the Quantum State: Perimeter Institute, Waterloo, Canada, 27 September - 2 October 2009
- Philosophy of Science in a Forest (PSF2010): Internationale School voor Wijsbegeerte, Leusden, Holland, 14 May - 15 May 2010; talk: ‘Relativistic Bohmian mechanics’
- Two days of Theoretical and Mathematical Physics: Oostduinkerke, Belgium, 28-29 May 2010; 5-min presentation ‘Beyond the quantum’
- What is Quantum Theory?: Sexten (Bozen), Italy, 2-11 August 2010; talk: ‘The ontology of quantum field theory’
- 21st-century directions in de Broglie-Bohm theory and beyond: Vallico Sotto, Italy, 28 August - 4 September 2010; talk: ‘Pilot-wave theory and quantum fields’
- Space-Time-Matter - current issues in quantum mechanics and beyond (Fifth International Workshop DICE2010): Castiglioncello, Italy, 13-17 September 2010; talk: ‘Pilot-wave theory and quantum fields’
- PSA 2010 Biennial Meeting: Montreal, Canada, 4-6 November 2010; talk: ‘Spontaneous Symmetry Breaking and the Higgs Mechanism’
- Theory at Sea: Oostduinkerke, Belgium, 27-28 May 2011
- Detleffest: Munich, Germany, 27 June - 1 July 2011
- Quantum Theory without Observers: Sexten (Bozen), Italy, 25 July - 3 August 2011; talk: ‘Relativity’
- NOSY/DyGeSt InterUniversity Attraction Pole Meeting: Brussels, Belgium, 26 September 2011
- Jean Bricmont’s 60th anniversary’s conference: Brussels, Belgium, 10-11 April 2011
- Quantum Malta 2012: Fundamental Problems in Quantum Physics: Malta, 24-27 April 2012; talk: ‘Semi-classical approximations based on the de Broglie-Bohm theory’
- Theory at Sea: Oostduinkerke, Belgium, 8-9 June 2011; talk: ‘de Broglie-Bohm theory’



- Open Problems in Quantum Mechanics Workshop: Frascati, Italy, 20-22 June 2012; talk: ‘Semi-classical approximations based on de Broglie-Bohm theory’
- Workshop on Philosophy of Cosmology, Firenze, Italy, 23-27 July 2012
- Quantum Theory without Observers II: Sexten (Bozen), Italy, 30 July - 7 August 2012; talk: ‘Semi-classical approximations based on de Broglie-Bohm theory’
- Workshop ”Foundations of QM and Relativistic Spacetime”: Athens, Greece, 25-26 September 2012; talk ‘Semi-classical gravity based on de Broglie-Bohm theory’ (keynote speaker)
- Quantum Theory without Observers III: Bielefeld, Germany, 22-26 April 2013; talk: ‘Lorentz invariant Bohmian mechanics’ (keynote speaker)
- Haunted Workshop: Who’s afraid of Quantum Theory?: Tepoztlan, Mexico, 18-22 November 2013; talk: ‘Bohmian mechanics’ (keynote speaker)
- 2014 COST meeting on Fundamental Problems in Quantum Physics: Rehovot, Israel, 23-27 March 2014; talk: ‘Towards a novel approach to semi-classical gravity’
- Philosophy of Cosmology workshop: Rutgers University, USA, 25 April 2014; talk: ‘A practical application of quantum philosophy’
- Philosophy of Cosmology: Tenerife, Spain, 13-16 September 2014; talk: ‘Towards a novel approach to semi-classical gravity’
- Jeremy Butterfield Fest: University of Cambridge, UK, 6-7 February 2015
- Fundamental Problems in Quantum Physics: Erice, Italy, 23-27 March 2015; talk: ‘Must space-time be singular?’
- Annual Scientific Meeting of the Belgian Physical Society: University of Liege, Belgium, 13 May 2015; talk: ‘Must space-time be singular?’
- Theory at Sea: Oostende, Belgium, 21-22 May 2016; talk: ‘Must space-time be singular?’
- Leuven-Buenos Aires workshop: K.U. Leuven, Belgium, 26-27 July 2016; talk: ‘Observing fluctuations and fluctuating observers’
- Mathematical Foundations of Physics: Munich, Germany, 1-4 November 2016; talk: ‘Applications of Bohmian mechanics in quantum gravity’
- Fundamental Problems of Quantum Physics: Bangalore, India, 5-10 December 2016; talk: ‘Must space-time be singular?’
- Theory at Sea: Oostende, Belgium, 7-8 June 2017

- Philosophy of Quantum Gravity: Chateau de Bossey, Switzerland, 27-30 June 2017; talk: ‘Must space-time be singular?’
- Direct empirical status and the ontology of symmetries in physics: Louvain-la-Neuve, Belgium, 3-4 July 2017; talk: ‘Spontaneous symmetry breaking and the Higgs mechanism: Lifting the veil of gauge’
- Quandrops17: Liege, Belgium, 3-5 July 2017; talk: ‘Surreal droplet trajectories’
- Multi-Time Wave Functions, Rutgers University, New Brunswick, USA, 26-27 March 2018; talk: ‘Multi-time wave equations from quantum field theory’
- Rutgers-Columbia Workshop on the Metaphysics of Science: Quantum Field Theories, Rutgers University, New Brunswick, USA, 17-18 May 2018; talk: ‘Bohmian quantum field theory’
- Theory at Sea: Oostduinkerke, Belgium, 7-8 June 2018; talk: ‘Observing fluctuations and fluctuating observers’
- Quantum and Semiclassical Trajectories, Dresden, Germany, 12-14 June 2018; talk: ‘Semi-classical approximations based on Bohmian mechanics’
- The universe as a quantum lab, Paris, France, 19-21 September 2018; talk: ‘Must space-time be singular?’
- Summer School: The Nature of Entropy I, Saig, Germany, 22-27 July 2019

### **Research visits and talks**

- Perimeter Institute, Waterloo, Canada, 11 Februari 2004; talk: ‘The de Broglie-Bohm pilot-wave interpretation’
- Perimeter Institute, Waterloo, Canada, 28 September 2005; talk: ‘Pilot-wave theory for the standard model’
- Universiteit Gent, Belgium, 11 November 2005; talk: ‘De Broglie-Bohm theorie’
- Institut d’histoire et de philosophie des sciences et des techniques, Paris, France, 4-5 May 2006; talk: ‘A new pilot-wave model for quantum field theory’
- Centre de Physique Théorique, Marseille, France, 13-15 May 2006; talk: ‘Introduction to de Broglie-Bohm theory’
- Institute for History and Foundations of Science, Utrecht, the Netherlands, 7 December 2006; talk: ‘Recent developments in pilot-wave theory for quantum field theory’
- Mathematisches Institut Ludwig-Maximilians-Universität, München, Germany, 11-15 December 2006; talk: ‘A Dirac sea pilot-wave model for quantum field theory’

- Department of Mathematics, Rutgers University, New Brunswick, USA, 12 March 2008; talk: ‘Bohmian mechanics and quantum equilibrium’
- Department of Physics, Columbia University, New York, USA, March 2008; invited lecture series (Brian Greene) on Bohmian mechanics (4 lectures)
- K.U. Leuven, Belgium, 20 November 2008; talk: ‘Spontaneous symmetry breaking and the Higgs mechanism’
- Julian Barbour at College Farm, Banbury, UK, 11-16 December 2008
- Perimeter Institute, Waterloo, Canada, 23 September - 13 October 2009
- Mathematisches Institut Ludwig-Maximilians-Universität, München, Germany, 19-23 October 2009
- Universität Wuppertal, Wuppertal, Germany, 12 July 2010; talk: ‘Spontaneous symmetry breaking and the Higgs mechanism’
- Laboratory of Cosmology and Experimental High Energy Physics, CBPF, Rio de Janeiro, Brazil, 31 May - 23 June 2011; talks: ‘de Broglie-Bohm theory and quantum equilibrium’, ‘de Broglie-Bohm theory and quantum field theory’
- University of Oxford, Oxford, UK, 30 November - 2 December 2011; talk: ‘Spontaneous symmetry breaking and the Higgs mechanism’
- Institut d’Astrophysique de Paris, France, 9 January 2012; talk: ‘The quantum-to-classical transition in inflationary cosmology’
- University of Cambridge, UK, 14-17 March 2012; talk: ‘Pilot-wave theory and quantum fields’
- University of Western Ontario, London, Canada, 24-25 January 2012; talks: ‘Towards a Novel Approach to semi-classical gravity’ and ‘Spontaneous symmetry breaking and the Higgs mechanism: Lifting the veil of gauge’
- UNAM, Mexico City, Mexico, 1-23 May 2013; talks: ‘Introduction to the de Broglie-Bohm theory’ and ‘Semi-classical approximations based on de Broglie-Bohm theory’
- Rutgers University, USA, 17 October 2013: talk ‘Semi-classical approximations based on Bohmian mechanics’
- Columbia University, USA, 12 November 2013: talk ‘Spontaneous Symmetry Breaking and the Higgs Mechanism: Lifting the veil of gauge’
- Laboratory of Cosmology and Experimental High Energy Physics, CBPF, Rio de Janeiro, Brazil, 5-25 February 2014; talk: ‘Towards a novel approach to semi-classical gravity’

- University of Liège, Belgium, 10 April 2014; talk: ‘Semi-classical approximations based on Bohmian mechanics’
- The Université catholique de Louvain, Belgium, 26 Februari 2015; talk ‘Bohmian mechanics’
- Mathematisches Institut Ludwig-Maximilians-Universität, München, Germany, 17-21 August 2015; talk: ‘The Bohmian approach to the problems of cosmological quantum fluctuations’
- University of Liège, Belgium, 28 August 2015; talk: ‘Non-locality and Bell’s theorem’
- Institute for Mathematics, Astrophysics and Particle Physics, Radboud University Nijmegen, the Netherlands, 14-17 March 2016; lecture: ‘Introductions to Bohmian mechanics’, talk: ‘Towards a novel approach to semi-classical gravity’
- Institute for History and Foundations of Science, Utrecht, the Netherlands, 19 March 2016; talk: ‘Observing fluctuations and fluctuating observers’
- Munich Center for Mathematical Philosophy, München, Germany, 18 May 2016; talk: ‘Observing fluctuations and fluctuating observers’
- Mathematisches Institut Ludwig-Maximilians-Universität, München, Germany, 19 October 2016; talk: ‘Must space-time be singular?’
- Mathematisches Institut Ludwig-Maximilians-Universität, München, Germany, 07-14 July 2019; talk: ‘Minisuperspace with dust: deriving dark energy and eliminating cosmological singularities’
- Mathematisches Institut Ludwig-Maximilians-Universität, München, Germany, 21-23 November 2019
- Hoger Instituut voor Wijsbegeerte, KU Leuven, 29 November 2019; talk: Time-reversal invariance and ontology

### **Summerschools:**

- Strings, Gravity and Cosmology: Perimeter Institute, Waterloo, Canada: 20 June - 8 July 2005
- Philosophy of cosmology: Santa Cruz, USA: 24 June - 12 July 2013; talk: ‘Bohmian mechanics and cosmology’
- 3rd International Summer School in Philosophy of Physics: Saig, Germany: 20-25 July 2015; lectures on ‘The Ontology of QFT’
- Sommerakademie ”Quantenphysik verstehen”, Schweizerische Studienstiftung, Magliaso, Switzerland: 5-12 September 2015; lecturer for 4 hours a day

- Winterseminar LMU München, Bad Driburg, Germany 22-26 Februari 2016; talk: ‘Semi-classical approximations based on Bohmian mechanics’
- 4th International Summer School in Philosophy of Physics, Saig, Germany: 1823 July 2016; talk: ‘The Wave Function in Quantum Gravity’
- 5th International Summer School in Philosophy of Physics, Saig, Germany: 1722 July 2017
- 2018 Leuven Summer school on nonequilibrium physics, Leuven, Belgium; 28 May - 1 June 2018

### **Organizational activities:**

- Co-organizer, with Guido Bacciagaluppi, Christopher Fuchs and Lucien Hardy, of the conference: The Clock and the Quantum: Time in Quantum Foundations, Perimeter Institute, Waterloo, Canada, September 28 - October 2, 2008.
- Co-organizer, with A. Bassi, P. Blanchard, I. Burghardt, C. Curceanu, F. Dowker, D. Dürr, M. Esfeld, G. Ghirardi, S. Goldstein, T. Maudlin and N. Zanghì, of the conference: Quantum Theory without Observers III, 22-26 April, 2013.
- Help with organizing the summerschool ‘Philosophy of cosmology’: Santa Cruz, USA, 24 June - 12 July 2013.
- Co-organizer, with A. Bassi, M. Carlesso and L. Ferialdi of the conference: ‘The Quantum and the Cosmos’: Trieste, Italy, 23-26 March 2020; canceled due to the corona pandemic.

### **Teaching:**

- 1999 - 2000: Private teacher mathematics and physics for university students (Studidac, Ghent, Belgium).
- 2001 - 2004: Lab demonstrator general physics, University of Ghent, Belgium.
- 2003 - 2004: Lecturer for some sessions of the course ‘Foundations of Quantum Mechanics’, University of Ghent, Belgium.
- summer 2005, 2006, 2008: Mentor ‘International Summer School for Young Physicists’, Perimeter Institute, Canada.
- 27-31 August 2007: Mentor/Lecturer at the ‘Quantum Foundations Summer School’, Perimeter Institute, Canada.
- March 2008: Lecture series on Bohmian mechanics (4 lectures, on invitation of Brian Greene), Department of Physics, Columbia University, New York, USA.

- fall 2008, 2009, 2010, 2011: Tutorial for the course ‘Analytical mechanics’ (for master students physics), K.U.Leuven, Belgium.
- fall 2008, 2009, 2010, 2011: Lectures on symmetry for the course ‘Natural Philosophy’ (mainly for bachelor students philosophy and physics), with personally collected course material, K.U.Leuven, Belgium.
- 2-6 March 2009: IITS course K.U.Leuven, Belgium, ‘Foundations of quantum mechanics including recent developments’; one week lecture course primarily aimed for PhD. students.
- fall 2010: Tutorial for the course ‘Classical mechanics’ (mainly for bachelor students physics and mathematics), K.U.Leuven, Belgium.
- 21 December 2011: Lecture ‘Introduction to the foundations of quantum mechanics’, 3 bachelor physics, K.U.Leuven, Belgium.
- fall 2013: Lecturer ‘Foundations of quantum mechanics’, undergraduate course, mathematics department, Rutgers University, USA.
- spring 2016: Lecturer for some sessions of the course ‘Introduction to Bohmian Mechanics’, LMU, Germany.
- 6-8 September 2016: IITS course K.U.Leuven, Belgium, ‘A first course on quantum foundations’; lecture course of three days primarily aimed for PhD. students.
- fall 2017: Tutorial for the course ‘Mathematics III for physicists’, LMU, Germany.
- fall 2018: Tutorial for the course ‘Advanced quantum mechanics’, KU Leuven, Belgium.
- spring 2019: Lecturer ‘Foundations of quantum mechanics’, master course, KU Leuven, Belgium.

### **Supervision:**

- October 2002 - June 2003: Supervision of master thesis: Ghent: Mike Vanderroost, title: ‘Het begrip tijd in de Bohmse mechanica’
- June 2007 - August 2007: Supervision of undergraduate student Domenic Denicola: Perimeter Institute: Holland’s rotator model.
- 2008-2012: Supervision of various bachelor and master projects at K.U.Leuven.
- October 2010 - June 2011: Co-supervision of master thesis: Leuven: Heleen Gheyselen, title: ‘Marxism and quantum theory’.
- October 2011 - June 2012: Supervision of master thesis: Leuven: Wouter Reyskens, title: ‘Quantum-to-classical transition in inflationary cosmology’.

- October 2015 - June 2016: Supervision of master thesis: München: Aaron Schaal, title: ‘The Newton-Schrödinger equation’.
- October 2016 - June 2017: Supervision of master thesis: München: Hannah Ochner, title: ‘Space-time singularities in quantum gravity’.
- October 2016 - October 2017: Supervision of master thesis: München: Leopold Kellers, title: ‘Topics in applied Bohmian mechanics’.
- Januari 2018 - present: Supervision of bachelor and master projects at K.U.Leuven.
- October 2018 - June 2019: Co-supervision of master thesis: Leuven: Kasper Meerts, title: ‘Exploring quantum Friedmann equations’.

### **Hiring Committees:**

- 2004 - 2008: Postdoc representative on Quantum Foundations postdoc hiring committee, Perimeter Institute.
- 2005 - 2006: Postdoc representative on postdoc hiring committee, Perimeter Institute.

### **Refereeing:**

- Refereed for:  
*AIP Advances, American Journal of Physics, Annalen der Physik, Annals of Physics, Astrophysical Journal, Canadian Journal of Physics, Classical and Quantum Gravity, Entropy, Erkenntnis, European Physics Journal C, European Physics Journal D, European Physics Journal Plus, European Journal for Philosophy of Science, Europhysics Letters, Fluctuation and Noise Letters, Foundations of Physics, Galaxies, General Relativity and Gravitation, Handbook of Mereology, Heliyon, IEEE Access, Il Nuovo Cimento B, International Journal of Quantum Information, International Journal of Theoretical Physics, International Studies in the Philosophy of Science, Journal for General Philosophy of Science, Journal of Modern Physics A, Journal of Physics A, Journal of Physics Communications, Journal of Statistical Physics, Galaxies, Mathematics, Modern Physics Letters A, Nuovo Cimento B, Perspectives on Science, Philosophy of Science, Physica A, Physica Scripta, Physical Review A, Physical Review D, Physical Review Letters, Proceedings of the Royal Society A, Scientific Reports, Studies in the History and Philosophy of Modern Physics, Symmetry, Synthese, The British Journal for the Philosophy of Science, The European Physical Journal D, Universe and Zeitschrift für Naturforschung A.*

### **Languages:**

- Native Dutch speaker, fluent English. Basic French and German.

**From:** Angelo Bassi [bassi@ts.infn.it](mailto:bassi@ts.infn.it)  
**Subject:** COST Action CA15220: Result of eVote of 24th August 2020 - New MC member from Belgium  
**Date:** 1 September 2020 at 16:18



**To:** Angelo Bassi [bassi@ts.infn.it](mailto:bassi@ts.infn.it), Mauro Paternostro [m.paternostro@qub.ac.uk](mailto:m.paternostro@qub.ac.uk), Rupert Ursin [rupert@ursin.com](mailto:rupert@ursin.com), Vladyslav Usenko [usenko@optics.upol.cz](mailto:usenko@optics.upol.cz), Albert Roura [albert.roura@uni-ulm.de](mailto:albert.roura@uni-ulm.de), Christoph Marquardt [christoph.marquardt@mpl.mpg.de](mailto:christoph.marquardt@mpl.mpg.de), Michael Drewsen [drewsen@phys.au.dk](mailto:drewsen@phys.au.dk), Maciej Lewenstein [maciej.lewenstein@icfo.es](mailto:maciej.lewenstein@icfo.es), Romain QUIDANT [romain.quidant@icfo.es](mailto:romain.quidant@icfo.es), Philippe BOUYER [philippe.bouyer@institutoptique.fr](mailto:philippe.bouyer@institutoptique.fr), Antoine Heidmann [antoine.heidmann@lkb.upmc.fr](mailto:antoine.heidmann@lkb.upmc.fr), Sabrina MANISCALCO [smanis@utu.fi](mailto:smanis@utu.fi), Gheorghe-Sorin Paroanu [sorin.paroanu@aalto.fi](mailto:sorin.paroanu@aalto.fi), Lucia Hackermuller [lucia.hackermuller@nottingham.ac.uk](mailto:lucia.hackermuller@nottingham.ac.uk), Wolf von Klitzing [wvk@iesl.forth.gr](mailto:wvk@iesl.forth.gr), Savvidis Ioannis [i.savvidis@cmc.gov.gr](mailto:i.savvidis@cmc.gov.gr), Lajos Diosi [diosi.lajos@wigner.mta.hu](mailto:diosi.lajos@wigner.mta.hu), Géza Toth [geza.toth.hu@gmail.com](mailto:geza.toth.hu@gmail.com), Mario Stipcevic [mario.stipcevic@irb.hr](mailto:mario.stipcevic@irb.hr), Catalina Curceanu [catalina.curceanu@inf.infn.it](mailto:catalina.curceanu@inf.infn.it), Guglielmo Tino [tino@fi.infn.it](mailto:tino@fi.infn.it), Hagai Eisenberg [hagai.eisenberg@huji.ac.il](mailto:hagai.eisenberg@huji.ac.il), Alexander RETZKER [retzker@phys.huji.ac.il](mailto:retzker@phys.huji.ac.il), Emanuele Pelucchi [emanuele.pelucchi@tyndall.ie](mailto:emanuele.pelucchi@tyndall.ie), Vyacheslavs Kashcheyevs [slava@latnet.lv](mailto:slava@latnet.lv), Marcis Auzinsh [Marcis.Auzins@lu.lv](mailto:Marcis.Auzins@lu.lv), Andre Xuereb [andre.xuereb@um.edu.mt](mailto:andre.xuereb@um.edu.mt), Joakim Bergli [joakim.bergli@fys.uio.no](mailto:joakim.bergli@fys.uio.no), Lars M. Johansen [lars.m.johansen@hbv.no](mailto:lars.m.johansen@hbv.no), Simon Groeblacher [s.groeblacher@tudelft.nl](mailto:s.groeblacher@tudelft.nl), Yasser Omar [yasser.omar@lx.it.pt](mailto:yasser.omar@lx.it.pt), Jose Leitao [jleitao@lx.it.pt](mailto:jleitao@lx.it.pt), Jaroslaw Mischczak [jarek@mischczak.eu](mailto:jarek@mischczak.eu), Radu Ionicioiu [r.ionicioiu@theory.nipne.ro](mailto:r.ionicioiu@theory.nipne.ro), Marius Trusculescu [marcus@spacescience.ro](mailto:marcus@spacescience.ro), Boure [boure@fysik.su.se](mailto:boure@fysik.su.se), Jan-Åke Larsson [jan-ake.larsson@liu.se](mailto:jan-ake.larsson@liu.se), Mario Ziman [ziman@savba.sk](mailto:ziman@savba.sk), Özgür Müstecaplıoğlu [omustecap@ku.edu.tr](mailto:omustecap@ku.edu.tr), Humeyra Caglayan [hcaglayan@bilkent.edu.tr](mailto:hcaglayan@bilkent.edu.tr), Andre Stefanov [andre.stefanov@iap.unibe.ch](mailto:andre.stefanov@iap.unibe.ch), Ulrik Andersen [ulrik.andersen@fysik.dtu.dk](mailto:ulrik.andersen@fysik.dtu.dk), Fabian Steinlechner [Fabian.Steinlechner@univie.ac.at](mailto:Fabian.Steinlechner@univie.ac.at), Nikolai Kiesel [nikolai.kiesel@univie.ac.at](mailto:nikolai.kiesel@univie.ac.at), Jaromir Fiurasek [fiurasek@optics.upol.cz](mailto:fiurasek@optics.upol.cz), Radim Filip [filip@optics.upol.cz](mailto:filip@optics.upol.cz), Erik Beckert [erik.beckert@iof.fraunhofer.de](mailto:erik.beckert@iof.fraunhofer.de), Claus Laemmerzahl [claus.laemmerzahl@zarm.uni-bremen.de](mailto:claus.laemmerzahl@zarm.uni-bremen.de), Valerio Pruneri [valerio.pruneri@icfo.es](mailto:valerio.pruneri@icfo.es), Serge Reynaud [serge.reynaud@upmc.fr](mailto:serge.reynaud@upmc.fr), Astrid Lambrecht [astrid.lambrecht@upmc.fr](mailto:astrid.lambrecht@upmc.fr), Hendrik Ulbricht [h.ulbricht@soton.ac.uk](mailto:h.ulbricht@soton.ac.uk), Laszlo Bacsardi [bacsardi@inf.nyme.hu](mailto:bacsardi@inf.nyme.hu), Paolo Villorosi [paolo.villorosi@dei.unipd.it](mailto:paolo.villorosi@dei.unipd.it), David Vitali [david.vitali@unicam.it](mailto:david.vitali@unicam.it), Kjetil Borkje [kjetil.borkje@usn.no](mailto:kjetil.borkje@usn.no), Markku Jaaskelainen [mjk@du.se](mailto:mjk@du.se), Landragin ARNAUD [arnaud.landragin@obspm.fr](mailto:arnaud.landragin@obspm.fr), Ivette FUENTES [ivette.fuentes@nottingham.ac.uk](mailto:ivette.fuentes@nottingham.ac.uk), Eric Wille [eric.wille@esa.int](mailto:eric.wille@esa.int), Bruno Leone [bruno.leone@esa.int](mailto:bruno.leone@esa.int), Eamonn Murphy - ESA [eamonn.murphy@esa.int](mailto:eamonn.murphy@esa.int), Serkan Ateş [serkanates@iyte.edu.tr](mailto:serkanates@iyte.edu.tr), Humeyra Caglayan [humeyra.caglayan@tut.fi](mailto:humeyra.caglayan@tut.fi), Ticijana Ban [ticijana@ifs.hr](mailto:ticijana@ifs.hr), Miralem Mehic [miralem@mehic.info](mailto:miralem@mehic.info), Denis Arcon [denis.arcon@ijs.si](mailto:denis.arcon@ijs.si)

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To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"  
Cc: Substitute Members and Observers

**Subject: Result of eVote of 24th August 2020 - New MC member from Belgium**

Dear Friends and Colleagues,

the eVote of 24th August 2020, regarding the application of Dr. Ward Struyve from KU Leuven, as new MC member of QTSpace, is unanimously approved.

Thank you and kind regards,  
Angelo

Department of Physics  
Strada Costiera 11  
34151 Miramare-Trieste  
ITALY  
[Email: \[bassi@ts.infn.it\]\(mailto:bassi@ts.infn.it\)](mailto:bassi@ts.infn.it)  
[Web: \[www.qmts.it\]\(http://www.qmts.it\)](http://www.qmts.it)