

Curriculum Vitae

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Richard Dawid

Stockholm University
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Areas of Specialization:

philosophy of science, philosophy of physics, Bayesian epistemology.

Areas of Competence:

epistemology, history of analytical philosophy, philosophy of mind, pre-Socratics.

Fluent Languages:

German, English

Present Employment:

Senior Lecturer at the University of Stockholm.

Education, Past Employments, Grants:

- 1992: Diploma in physics at the University of Vienna.
- 1994-1996: DAAD fellowship at the Institute for Theoretical Physics at the Technical University of Munich.
- 1997: PhD in physics at the University of Vienna. Thesis: 'Standard and supersymmetric top-condensation between its effective and underlying theory'. Supervisor: Prof. Gerhard Ecker.

- 1997-1999: Postdoc at the Lawrence Berkeley National Laboratory in Berkeley, California funded by a Schrödinger Fellowship. Research in the context of supersymmetry and superstrings. Increasing interest in the philosophical implications of particle physics.
- Since 2000: Work on the philosophical research project 'Implications of Modern Particle Physics for the Realism Debate' in Vienna.
- 2001-2004: Research fellow at the Philosophy department, University of Vienna funded by the FWF project P15249 "Realism and String Theory", project leader Univ. Prof. Dr. Herbert Hrachovec.
- 2007-2010: Research fellow at the Institute Vienna Circle / University of Vienna.
Project leader of the FWF-research project "Changes of the Scientific Paradigm in String Theory"
- spring 2008: Visiting Fellow at the Pittsburgh Center for Philosophy of Science.
- 2010-2013: Research fellow at the Department for Philosophy of the University of Vienna.
Project leader of the FWF-research project "Theory Assessment in String Theory and Cosmic Inflation"
- fall 2011: Visiting Fellow at the Tilburg Center for Logic and Philosophy of Science.
- July 2013: Habilitation at the University of Vienna with the Habilitation treatise "String Theory and the Scientific Method".
- 9.-11. 2013: Guest Professorship at the University of South Carolina, Columbia, USA.
- 12 .2013-1. 2015: Research Fellow at the Center for Mathematical Philosophy at the LMU Munich.
2. 2015 - 3. 2016: Researcher at the Center for Mathematical Philosophy at the LMU.
Project leader of the DFG-research project "Non-Empirical Theory Confirmation".
- Since April 2016: "Senior Universitetslektor" (equivalent to a tenured associate prof.) at the University of Stockholm..

Publications:

Book:

[B] *STRING THEORY AND THE SCIENTIFIC METHOD*, Cambridge University Press, 2013.

Papers in Philosophy of Science and Philosophy of Physics:

[30] Duality, Empirical Equivalence and Free Parameters, submitted

[29] NMA without Base Rate Fallacy (with Stephan Hartmann), submitted

[28] Novel Confirmation and the Underdetermination of Scientific Theory Building, submitted.

[27] High Energy Physics and Scientific Realism, forthcoming, to appear in *Scientific Realism*, Routledge.

[26] Bayesian Perspectives on the Discovery of the Higgs Particle, Synthese, forthcoming.

[25] Modelling Non-Empirical Confirmation, in Ippoliti, E. T. Nickles and F. Sterpetti (eds.), *Models and Inferences in Science*, pp 191-205, Springer 2016.

[24] Turning Norton's Dome Against Material Induction, *Foundations of Physics*, 45(9), 1-9, 2015.

[23] Many Worlds: Decoherent or Incoherent? (with Karim Thebault), *Synthese*, 192(5), 1559-1580, 2015.

[22] The No-Alternatives Argument (with Stephan Hartmann and Jan Sprenger), *British Journal of the Philosophy of Science* 66(1), 213-234, 2015.

[21] Higgs Discovery and the Look Elsewhere Effect, *Philosophy of Science* 82/1: 76-96, 2015.

[20] Against the Empirical Viability of the Wallace Deutsch Approach to Quantum Mechanics (with Karim Thebault), *Studies in the History and Philosophy of Physics* 47: 55-61, 2014.

[19] Theory Assessment and Final Theory Claim in String Theory, *Foundations of Physics* 43(1), 81-100, 2013.

[18] Scientific Prediction and the Underdetermination of Scientific Theory Building, *PhilSci Archive* 4008.

[17] Schlick and van Fraassen: Two Different Perspectives on Causality and Quantum Mechanics, PhilSci Archive 10788 Boston Studies in the Philosophy of Science, forthcoming.

[16] High Energy Physics and the Marginalization of the Phenomena, Manuscripto 33/1, special issue *Issues in the Philosophy of Physics*: 165-206, 2010.

[15] On the Conflicting Assessments of the Current Status of String Theory, *Philosophy of Science* 76/5: 984-996 2009.

[14] Wenn Naturwissenschaftler über Naturwissenschaftlichkeit streiten, in *Pseudowissenschaft. Konzeptionen von Nicht-/Wissenschaftlichkeit in der Wissenschaftsgeschichte*, D. Rupnow, V. Lipphardt, J. Thiel und C. Wessely (eds.): 395-416, Suhrkamp 2008.

[13] Scientific Realism in the Age of String Theory, *Physics and Philosophy* 11: 1-32, 2007.

[12] Underdetermination and Theory Succession from the Perspective of String Theory, *Philosophy of Science* 73/3: 298-322, 2007.

[11] Constructive Empiricism, Elementary Particle Physics and Scientific Motivation, PhilSci Archive 2243, 2005.

[10] Empirical Equivalence, Scientific Realism and String Theory, "Proceedings of the Wittgenstein Symposium, Kirchberg" 2005.

Papers in High Energy Physics and Cosmology

[9] Holographic Cosmology and its Relevant Degrees of Freedom, 1999. 16pp., e-Print Archive: hep-th/9907115

[8] A Speculative Remark on Holography, 1998. 14pp., *Physics Letters B*451:19-26,1999, e-Print Archive: hep-th/9811243

[7] Propagating Boundstates From Sfermions, 1998. 12pp., e-Print Archive: hep-ph/9809326

[6] Higher Dimensional Operators in Top Condensation From a Renormalization Group Point of View, (with Andreas Blumhofer and Johannes Manus), 1997. 18pp., *Physical Review D*58:035009,1998, e-Print Archive: hep-ph/9710495

[5] Standard and Supersymmetric Top Condensation Between its Effective and Underlying Theory, 1997. 84pp. Doctoral thesis.

[4] SUSY Violation in Effective Theories (with Serguei Reznov), 1997. 10pp. *Physics Letters B*401:268-272,1997, e-Print Archive: hep-ph/9701258

[3] Propagating Boundstates in SUSY (with Serguei Reznov), 1996. 13pp. *Physics Letters B*388:315-323,1996, e-Print Archive: hep-ph/9607458

[2] Consistency of Higgs and W Mass Determinations in a Model With Composite Scalars, CONSISTENCY OF HIGGS AND W MASS DETERMINATIONS IN A MODEL WITH COMPOSITE SCALARS(with Andreas Blumhofer and Manfred Lindner),1995. 11pp., Ringberg Electroweak 1995:161-172.

[1] Connections Between Connections Between Dynamical And Renormalization Group Techniques in Top Condensation Models, (with Andreas Blumhofer and Manfred Lindner), 1995. 11pp., Physics Letters B360:123-130,1995, e-Print Archive: hep-ph/9503337.

Talks:

- July 2016 “Non-Empirical Confirmation”, invited opening talk at the Conference “Foundations 2016” in London.
- June 2016 “Non-Empirical Confirmation”, invited talk at the ‘Conference within a Conference’ “The Limits of Scientific Cosmology” at the annual meeting of the American Astronomical Society in San Diego.
- June 2016 “Why Trust a Theory? String Theory and Non-Empirical Confirmation”, invited talk at the University of Mainz.
- May 2016 “Understanding, String Dualities and Empirical Equivalence”, invited keynote talk at the workshop “Explanation and Understanding” in Århus.
- May 2016 “Non-Empirical Confirmation”, invited talk at the University of Århus
- May 2016 Talk “Duality, Empirical Equivalence and Free Parameters” at the Institute Vienna Circle in Vienna.
- March 2016 “String Theory, Final Theory Claim and Scientific Realism”, GWP 2016, Düsseldorf.
- Feb. 2016 “Duality and the changing Notion of Empirical Equivalence”, invited talk at the Univ. of Illinois in Chicago.
- Feb. 2016 “Scientific Underdetermination and Scientific Realism”, Conference “Scientific Realism and the Challenge from the History of Science”, Indianapolis.
- Feb. 2016 “Non-Empirical Confirmation”, invited talk at the UC Irvine.
- Jan. 2016 “Non-Empirical Confirmation”, invited talk at the University of Stockholm.
- Dec. 2015 „Non-Empirical Theory Confirmation“, Workshop “Why Trust a Theory?”, Munich
- Nov. 2015 „Wann ist eine Theorie mehr als Spekulation?“ invited talk at the Moritz Schlick Symposium 2015, Rostock, Germany
- Nov. 2015 “Nichtempirische Theorienbestätigung”, invited talk, University of Bielefeld, Germany
- Sept. 2015 “NMA without Base Rate Fallacy”, EPSA 2015, Düsseldorf.
- Aug. 2015 “Bayesian Perspectives on the Discovery of the Higgs Particle”, CLMPS 2015, Helsinki.
- July 2015 “String Action” (with Micheal Stöltzner), WIP talk, LMU Munich.
- June 2015 “NMA without Base Rate Fallacy”, Objectivity 2015 in Tilburg.
- April 2015 “Bayesian Perspectives on the Discovery of the Higgs Particle”, LMU Munich
- April 2015 “NMA without Base Rate Fallacy”, Salzburg-Irvine-Munich Workshop in Logic and Philosophy of Science in Salzburg.
- April 2015 “Non-Empirical Theory Confirmation: What It Is and What It Is Not”, IUC Philosophy of Science in Dubrovnik.
- Nov. 2014 “String Theory and Empirical Equivalence, MCMP Munich Work in Progress Talk in Munich.
- Sept. 2014 “String Dualities and Empirical Equivalence” at the workshop “Foundations of Dualities” in Florence.
- Sept. 2014 “Modelling Scientific Confirmation” invited talk at the conference “Models and Inferences in Science” in Rome.

- June 2014 “Probability and Confidence: What does it mean to have discovered the Higgs Boson?” invited talk at the University of Tübingen.
- June 2014 “Bayesian Perspectives on the Higgs Discovery”, talk at the ‘Philosophy of Science Colloquium’, Institute Vienna Circle, Vienna.
- April 2014 “Bayesian Perspectives on the Discovery of the Higgs Particle” at the Workshop “Evidence, Discovery, Proof: Measuring the Higgs Particle” at the University of South Carolina, Columbia, SC.
- Jan. 2014 “String Theory and the Scientific Method”, invited talk at the Academy of Science in Budapest, Hungary.
- Dec. 2013 “String Theory and the Scientific Method” at the Center of Advanced Studies in Munich.
- Oct. 2013: “Beyond Measurement – String Theory and the Scientific Method” at the University of South Carolina, Columbia, SC, USA.
- Aug. 2013: “The Search for the Higgs Particle and the Look Elsewhere Effect” at the EPSA 2013 in Helsinki, Finland.
- Aug. 2013: “String Theory and Scientific Realism” at the World Congress of Philosophy in Athens, Greece.
- July 2013: “Against the Empirical Viability of the Deutsch-Wallace-Everett approach to Quantum Mechanics” at the Foundations of Physics Conference in Munich.
- July 2013: “Stringtheorie und wissenschaftliche Methode”, HabilitationTalk at the University of Vienna.
- June 2013: “Explanation and Effective Theories in Anthropic Reasoning” at the workshop “Reduction and Emergence in Physics” in Munich.
- May 2013: “String Theory, Final Theory Claim and Realism” at the workshop Quantum Gravity in Perspective in Munich.
- Mar. 2013: “Higgs Evidence and the Look Elsewhere Effect” at the Workshop “Philosophy of Physics” in Belgrade.
- Mar. 2013: “String Theory and Scientific Realism” at the Workshop “Philosophy of Physics” in Belgrade.
- Feb. 2013: “Higgs Evidence and the Look Elsewhere Effect” at the LSE, London.
- Dec. 2012: “Higgs Evidence and the Look Elsewhere Effect” at the LMU in Munich.
- Sept. 2012: “No Alternative Arguments”, with Stephan Hartmann and Jan Sprenger at the GAP2012 in Konstanz, Germany.
- June 2012: “Higgs Evidence and the Look Elsewhere Effect” at the 7th Pittsburgh Fellows Conference in Mugla, Turkey.
- May 2012: “No Alternative Arguments”, with Stephan Hartmann and Jan Sprenger at the Formal Epistemology Workshop (FEW) 2012 in Munich, Germany.
- Dec. 2011: “Non-Empirical Theory Confirmation”, at the Conference “Philosophy of Science in Europe”, Vienna, Austria.
- Nov. 2011: “Non-empirical Theory Confirmation”, Tilburg Center for Formal Philosophy, the Netherlands.
- July 2011: „A Bayesian Model of No Alternative Arguments“ at the 14th CLMPS in Nancy, France.

- Mar. 2011: „Warum Stringtheoretiker an ihre Theorie glauben – Nichtempirische Theorienbewertung und ihre Rolle in der Wissenschaftstheorie“ an der Universität Wien.
- Feb. 2011: „Novel Prediction and the Underdetermination of Scientific Theory Building“ at the Symposium “Novel Prediction” at the University of Düsseldorf, Germany.
- Nov. 2010: “Wie struktureller Realismus von neueren Entwicklungen der Hochenergiephysik profitieren könnte“, at the symposium „Struktureller Realismus in der Philosophie der Physik“ in Tübingen, Germany.
- May 2010: “Assessments of Underdetermination as an Element of Scientific Reasoning” at the ‘Konrad Lorentz Institute’ in Altenberg.
- Dec. 2009: “Limitations to Underdetermination in Theory Building and their Role in Fundamental Physics” at the Symposium (Un)conceived Alternatives in Vienna.
- Oct. 2009: “The Assessment of Scientific Underdetermination in Higgs Physics” at the EPSA 2009 in Amsterdam.
- Nov 2008: PSA 2008 in Pittsburgh , talk 'On the Conflicting Assessments of the Current Status of String Theory.
- May 2008: Invited Talk ‘Stringtheorie und struktureller Realismus’ at the University of Tübingen.
- April 2008: Invited Talk ‘String Theory and the Question of Theory Assessment’ at the Workshop ‘Stringtime in Pittsburgh’, Pittsburgh Center for Philosophy of Science.
- Jan. 2008: Talk at the Center for Philosophy of Science in Pittsburgh: ‘Underdetermination of Scientific Theory Building in String Physics and Philosophy of Science’.
- Aug. 2007: Affiliated Symposium at the LMPS: ‘East Meets West in the Philosophy of Science: Moritz Schlick and Hong Qian (Tscha Hung)’. Talk: ‘Causality and Quantum Mechanics as seen by Schlick / Hong Qian and van Fraassen’.
- Aug. 2007: ‘13th International Congress of Logic, Methodology and Philosophy of Science’, in Beijing. Talk: ‘Scientific Underdetermination and its Limitations’.
- Dec. 2006: Invited talk at the Workshop „Pseuowissenschaft Konzeptionen von Nicht-/Wissenschaftlichkeit in der Wissenschaftsgeschichte“ in Vienna: ‚Wenn Naturwissenschaftler über Naturwissenschaftlichkeit streiten’.
- May 2006: Invited talk at the University of Wuppertal: ‚Wissenschaftliche Unterbestimmtheit in Stringtheorie und allgemeiner Wissenschaftstheorie’.
- Mar. 2006: ‚DPG-Frühjahrstagung des Arbeitskreises Philosophie’ in Dortmund. Talk: ‚Scientific Realism, Underdetermination and Contemporary Particle Physics’.
- Jan. 2006: Talk: ‘Philosophical Problems of Quantum Physics’ at the ‘Philosophy of Science Colloquium’, Institute Vienna Circle, Vienna.
- Aug. 2005 ‘Fifth European Congress for Analytical Philosophy’, Lisbon. Talk: ‘High Energy Physics and Constructive Empiricism’.

- Aug. 2005: '28th International Wittgenstein Symposium' in Kirchberg am Wechsel. Talk: 'Empirical Equivalence, Scientific Realism and String Theory'.
- Jun. 2005: Talk 'Structural Realism and String Theory' at the 'Philosophy of Science Colloquium', Institute Vienna Circle, Vienna.
- Mar. 2005: Invited talk at Oxford University: 'How String Theory could Matter in Philosophy of Science'.
- Sept. 2004: '13th UK Meeting on the Foundations of Physics', Talk: 'Confirmation and Final Theory Claim – a Philosophical Look at String Theory'
- July 2004: Conference 'BSPS 2004', Talk: 'Underdetermination and Theory Succession in String Theory'.
- Spring 2004: Lecture Series 'Philosophy of String Theory' at the 'Philosophy of Science Colloquium', Institute Vienna Circle, Vienna.
- Aug. 2003: '12th International Congress of Logic, Methodology and Philosophy of Science', in Oviedo.
Talk: 'Scientific Realism in the Age of String Theory'.
- July 2003: Workshop on Structuralism in Florence
- Aug. 2001: Research visit at the Philosophy Departments of the New York University and the University of Princeton
- Jan. 2000: Talk at the Institute for Theoretical Physics, University of Vienna: 'The case for large extra dimensions'
- Aug. 1999: Talk at the Institute for Theoretical Physics, UC Berkeley: 'Holography and Cosmology'
- July 1998: Conference 'SUSY 98' in Oxford
Talk: 'Dynamical Electroweak Symmetry Breaking and its Connection to Supergravity'
- June 1998: Conference 'Strings 98' in Santa Barbara
- Jan. 1998: Talk at the Institute for Theoretical Physics, UC Berkeley: 'Top-condensation and Supergravity'
- May 1997: Conference 'SUSY 97' in Philadelphia
- May 1997: Research visit at the TU-Munich
- Nov. 1996: Triangle Seminar on Particle Physics, Vienna, Austria
Talk: 'Propagating Higgs boundstates in SUSY'
- Sep. 1995: DESY Theory Workshop, Hamburg, Germany
Talk: 'Connections between dynamical and renormalization group techniques in top condensation models'
- Sep. 1995: Research visit at CERN, Theory Division
- Sep. 1994: Triangle Summer School on chiral perturbation theory and non-commuting geometry in Bratislava, Slovakia
- Sep. 1993: Triangle Graduate School on Particle Physics, Prague, Czech Republic.
- Feb. 1993: Workshop on Particle Physics in Schladming, Austria

Referee for:

British Journal for the Philosophy of Science
Einstein Studies
Erkenntnis
Foundations of Physics
International Studies in the Philosophy of Science
Journal for General Philosophy of Science
Perspectives on Science
Philosophy of Science
Physics and Philosophy
Studies in the History and Philosophy of Modern Physics
Synthese
Theoria
Cambridge University Press
Pickering & Chatto
European Commission (EU)
National Science Foundation (USA)
Netherlands's Organization for Scientific Research (NL)
Research Foundation Flanders (Belgium)

Organizing and Editorial Activities:

Speaker of the organization committee of the workshop “Why Trust a Theory? Reconsidering Scientific Methodology in Light of Modern Physics”, Munich, December 2015.

Guest editor of the special issue “Epistemology of the Higgs Search” for *Synthese*, forthcoming.

Co-Organizer of the Workshop “Evidence, Discovery, Proof: Measuring the Higgs Particle” at the University of South Carolina, Columbia, SC, April 2014.

Speaker of the organization committee of the Symposium ‘(Un)conceived Alternatives’ in Vienna, December 2009.

Member of the Program Committee of the Workshop ‘Stringtime in Pittsburgh’ at the Center of Philosophy of Science, Pittsburgh, April 2008.

Co-organizer of the weekly ‘Colloquium for Philosophy of Science’ at the Institute Vienna Circle since 2004.

Acquisition of third party funded projects:

FWF-research project P 19450-N16 “Changes of the Scientific Paradigm in String Theory”, 2007-2010, 188 000 Euro.

FWF-research project P-22811-G17 “Theory Assessment in String Theory and Cosmic Inflation”, 2010-2013 , 208 669 Euro.

DFG-research project DA-1633/2-1”Non-Empirical Theory Confirmation”, 2015-2018.

Teaching:

'Introduction to the Philosophy of Science', lecture course, MA level, University of Stockholm, forthcoming.

'Realism', lecture course, advanced BA and MA level University of Vienna and LMU Munich.

'Philosophy of Mind', seminar, advanced BA and MA level, LMU Munich.

'Classical Empiricists – Locke, Berkeley, Hume', seminar, MA level, LMU Munich

'Scientific Method and Knowledge' lecture course, advanced BA and MA level, University of Vienna.

'Non-empirical Theory Confirmation', reading group, MA and PhD level, University of South Carolina.

'Theory Confirmation', seminar, advanced BA level, University of Vienna.

'Introduction to the Philosophy of Physics', lecture course, advanced BA level, University of Vienna.

'From Ancient Atomism to Modern Particle Physics – Philosophical Aspects of Microphysical Conceptions', lecture course, advanced BA and MA level, University of Vienna.

'The Metaphysical and the Scientific Realism Debate in the 20th Century', seminar, advanced BA and MA level, University of Vienna.

'Thinking about Science: Crucial Texts in Philosophy of Science in the 20th Century', seminar, introductory level, University of Vienna.

'Realism and Modern Physics', proseminar, introductory level, University of Vienna.

'Mathematical Methods in Theoretical Physics', proseminar, introductory level, Technical University Munich.

'Aspects of Elementary Particle Physics', seminar, advanced level, Technical University Munich.

Supervising, Committees:

PhD:

Joint supervisor: Henning Strandin, University of Stockholm, ongoing.

2nd supervisor: Radin Dardashti, LMU Munich, ongoing.

Reviewer and Committee: Lukas Mairhofer, University of Vienna 2014.

Reviewer and Committee: Sophie Ritson, University of Sidney, 2016.

Master:

Committee: Arne Traun, University of Vienna, August 2014

Supervisor: Mark Basafa, University of Vienna, ongoing.

Supervisor: Annegret Irrgang, LMU Munich, March 2016.

Supervisor: Kilian McGrath, LMU Munich, ongoing.

Public Appearances:

Article in the German newspaper TAZ by Ingo Arztt: „Ziehen Sie jetzt Ihre 10D-Brille auf“ (April 2. 2016).

Radio Interview in Von Tag zu Tag, Ö1, Austria,(Dec. 29 2015)

Article “A fight for the Soul of Physics” by Nathalie Wolchover on the Conference „Why Trust a Theory”, Quanta Magazine (Dec. 16 2015).

<https://www.quantamagazine.org/20151216-physicists-and-philosophers-debate-the-boundaries-of-science/>

(also appeared in The Atlantic)

Guest Commentary “What Confirms a Physical Theory?” in the Physics Blog *The Reference Frame*, (Sept. 17 2015).

<http://motls.blogspot.co.at/2015/09/what-confirms-physical-theory.html>

Interview by Luca Moretti for The Reasoner, Vol 8, Nr 8 (August 2014).

<http://www.thereasoner.org/>

Interview by Richard Marshall for 3AM:Magazine, (July 2014).

<http://www.3ammagazine.com/3am/string-theory-and-post-empiricism/>

Presentation of the paper “The No Alternatives Argument” with Stephan Hartmann and Jan Sprenger on the Oxford University Press Blog (April 2014).

<http://blog.oup.com/2014/04/inferring-the-unconfirmed-the-no-alternatives-argument/>

Interview by Tony Sobrado for “The Biggest Questions” (October 2013)

<http://thebiggestquestions.org/questions-topics/what-is-reality/what-is-reality-dr-richard-dawid-tony-sobrado/>

Article in the online edition of the Guardian about the paper “The No Alternatives Argument” (Brit. J.Phil. Sci.) with Stephan Hartmann and Jan Sprenger (May 2013).

<http://www.theguardian.com/science/life-and-physics/2013/may/04/no-alternative-bayes-penalties-philosophy-thatcher-merkel>

TV-appearance in the programme ‘Energie und Physik’ on Bayern-Alpha (March 2012)

TV-appearance in the programme ‘Yourope’ on Arte (January 2012).

Newspaper interview in the Austrian newspaper “Der Standard” (May 2010).

Radio interview on “Deutschlandradio” (Germany) (June 2009)

Newspaper article on my research in the Austrian newspaper “Der Standard” (Nov. 2006).

Radio interview on “Radio Orange” (Austria) (Jan. 2005).

Newspaper article on my research in the Austrian newspaper “Der Standard” (Feb. 2004).

Several articles on philosophy of science and other topics in the Austrian magazine “.copy” (between 2002 and 2005).