

XIII INTERNATIONAL ONTOLOGY CONGRESS

Under the patronage of UNESCO

PHYSIS

PHYSICS AND ONTOLOGY

www.ontologia.info

Uquim
⊕

San Sebastian 2-6 october
Barcelona 9 october
A Coruña 17 october

2018



With the support of
Social and Human
Sciences Sector



Eduardo Chillida - Pilar Belzunce

XIII INTERNATIONAL ONTOLOGY CONGRESS

Physics and Ontology

Under the patronage of UNESCO

Under the honorary presidency of François Englert

Program / Programa / Egitaraua

LECTURES, TALKS AND SPECIAL SESSIONS IN SAN SEBASTIÁN

Tuesday, October 2nd

Martes, 2 de Octubre / Asteartea, Urriak 2

Chillida-Leku Museum

17:00 Opening Ceremony / Ceremonia inaugural / Hasiera ekitaldia

Presidency of the Session: Pedro M. Echenique (Prince of Asturias Award and Max Planck Prize for Physics, DIPIC)

1) Welcoming Speech / Palabras de bienvenida / Ongi etorriaren hitzak.

2) Opening Academic Speech / Palabras de apertura académica / Hasiera akademikoaren hitzak:

The event will begin with a few words of tribute to **Robert Brout**, pioneer along with **François Englert** in the research on the so-called Higgs field and boson.

Speakers:

- **François Englert** (Nobel Prize in Physics, Honorary President of this edition. Université Libre de Bruxelles).
- **Jean Marie Frère** (Université Libre de Bruxelles).
- **Gerardus 't Hooft** (Nobel Prize of Physics. Utrecht University).

Lecture / Conferencia / Hitzaldia

François Englert. (Nobel Prize in Physics, Honorary President of this edition. Université Libre de Bruxelles).

Concert / Concierto / Kontzertua

Countertenor: **Carlos Mena**.

Pianist: **Susana García de Salazar**.

Works by A. Donostia, M. Ravel, B. Britten, A. Iglesias.

Appetizer

Wednesday, October 3rd
Miércoles, 3 de octubre / Asteazkena, Urriak 3

Faculty of Education, Philosophy and Anthropology, University of the Basque Country. Avenida de Tolosa 70, San Sebastián.

Room A: SALÓN DE GRADOS. Second Floor / Segundo Piso / Bigarren Solairua

Morning Lectures

Chair: Simon Kochen (Princeton University)

9:00-9:45 Alberto Cordero (CUNY). *Functional Ontologies and Pluralism.*

9:45-10:30 Michela Massimi (The University of Edinburgh). *Realism, Perspectivism, and Reality.*

10:30-11:15 Carl Hoefer (University of Barcelona). *QM, Non-locality, and Realism.*

11:15-11:30 COFFEE BREAK. THIRD FLOOR

Session at Donostia International Physics Center (DIPC) 12:00

12:00 Gerardus 't Hooft (Nobel Prize of Physics. Utrecht University). Seminar.

Evening Lectures

Chair: Bárbara Jiménez (University of Leeds)

15:15-16:00 Julián Pacho (University of the Basque Country). *Nuestra Mente No Estaba Preparada para Esto. Sobre un Conflicto de la Naturaleza Consigo Misma a Causa de la Ciencia.*

16:00-16:45 Javier Aguirre (University of the Basque Country). *Popper y los Presocráticos.*

16:45-17:30 Francesc Casadesús (University of Illes Balears). *¿Fue Sócrates un Físico?*

Chair: Michela Massimi (The University of Edinburgh)

17:30-18:15 Tomás Calvo (Complutense University of Madrid). *Physics as Ontology in the Aristotelian Project.*

18:15-19:00 Dimitri El Murr (ENS). *Physis as Tekhnè in Plato's Timaeus: Why is the Kosmos a Perfectly Self-sufficient Animal?*

Special Session 19:00-20:00

Chair: David Wallace (University of Southern California)

Debate with **Simon Kochen** (Princeton University). *The Free Will Theorem: The State of the Art.*

Wednesday, October 3rd
Miércoles, 3 de octubre / Asteazkena, Urriak 3

Faculty of Education, Philosophy and Anthropology, University of the Basque Country. Avenida de Tolosa 70, San Sebastián.

Room B: SALA DE JUNTAS. Second Floor / Segundo Piso / Bigarren Solairua

Morning Talks

Chair: Neda Ghatrouie (University of Amsterdam)

9:00-9:20 Prashant Kumar (Jawaharlal Nehru University). *Framing What There Is.*

9:20-9:40 Paula Atencia (Complutense University of Madrid). *Scientific Pluralism and Realism: Problems and Strategies to Reduce the Gap.*

9:40-10:00 João Luís de Lemos Cordovil (University of Lisbon). *OSR without Metaphysical Fundamentalism.*

10:00-10:20 Javier Sánchez-Cañizares (University of Navarra). *Classicality First: Why Decoherence Implies Copenhagen Interpretation.*

11:15-11:30 COFFEE BREAK. THIRD FLOOR

Evening Talks

Chair: Paula Atencia (Complutense University of Madrid)

15:00-15:20 Neda Ghatrouie (University of Amsterdam). *The Evolution of The Greek Concept of Physis from Homer and Hesiod to Anaxagoras: Emergence of a New Science.*

15:20-15:40 Jonas Ciurlionis (Vilnius University). *Heraclitus and Hippocrates: the Paradigm of Elements.*

15:40-16:00 Michael Fournier (Dalhousie University). *Using Chew's Bootstrap Model to Think about Epicurus' Minimal Parts.*

16:00-16:20 Vladimir Krasikov (Russian State University of Justice). *Antiquity: The Laws of the Formation of Theoretical Knowledge.*

Wednesday, October 3rd
Miércoles, 3 de octubre / Osteguna, Urriak 3

Faculty of Education, Philosophy and Anthropology, University of the Basque Country. Avenida de Tolosa 70, San Sebastián.

Room C: SEMINARIO DE FILOSOFÍA. Second Floor / Segundo Piso / Bigarren Solairua

Morning Talks

Chair: Manuel C. Ortiz (University of Navarra)

10:00-10:20 Mario Alvarado (University of Edinburgh). *La Crisis de la Ciencia y sus Principios en la Filosofía de Eduardo Nicol.*

10:20-10:40 María Lourdes Domínguez and José Ignacio Barragués (University of the Basque Country). *Una Revisión de la Irrazonable Eficacia de las Matemáticas en las Ciencias Naturales.*

10:40-11:00 Enric Pérez (University of Barcelona). *Unamuno y Schrödinger, Encuentros y Desencuentros.*

11:15-11:30 COFFEE BREAK. THIRD FLOOR

Evening Talks

Chair: Enric Pérez (University of Barcelona)

15:00-15:20 Damiano Sacco (ICI Berlin). *From Aristotle to Heisenberg. The Potential for Dynamis.*

15:20-15:40 Manuel C. Ortiz (University of Navarra). *From Heisenberg Back to Plato: the Problem of Matter in Quantum Physics.*

15:40-16:00 Boris Gubman and Carina Anufrieva (Tver State University). *F. Laruelle's Identities Theory: Synergetic Origin of Scientific Thought and Philosophy.*

16:00-16:20 Wang Zheng (Scuola Normale Superiore, Firenze). *Bruno's Ontology: a Renovated Concept of Nature.*

Thursday, October 4th
Jueves, 4 de octubre / Osteguna, Urriak 4

Faculty of Education, Philosophy and Anthropology, University of the Basque Country. Avenida de Tolosa 70, San Sebastián.

Room A: SALÓN DE GRADOS. Second Floor / Segundo Piso / Bigarren Solairua

Morning Lectures

Chair: Alberto Cordero (CUNY)

9:00-9:45 Juha Saatsi (University of Leeds). *Scientific Realism about Spin.*

9:45-10:30 Peter Vickers (Durham University). *Is Spin Real?*

Special Session 10:30-11:30

Chair: Pedro M. Echenique (DIPC, University of the Basque Country)

Debate with **Gerardus 't Hooft** (Nobel Prize of Physics. Utrecht University). *A Minority's View on Quantum Mechanics.*

11:30-11:45 COFFEE BREAK. THIRD FLOOR

Morning Lectures

Chair: Carl Hofer (University of Barcelona)

11:45-12:30 Ruediger Schack (Royal Holloway. University of London). *From Wigner's Friend to Participatory Realism.*

12:30-13:15 Gérard Naddaf (York University). *The Discovery of Physics and the First Secular Theories of Everything.*

13:15-14:00 Elie During (University of Nanterre). *Re-temporalizing Gravity: Whitehead's Relativity Theory and the Question of Nature.*

Evening Lectures

Chair: Miguel A. Ferrero (University of Oviedo)

15:00-15:45 Richard Healey (University of Arizona). *What Does it Mean to Say that a Quark or Higgs Boson Exists?*

15:45-16:30 Pilar Ruiz-Lapuente (University of Barcelona). *The Ontology of Dark Energy and its Implications.*

Chair: Ricardo Muiño (DIPC)

16:30-17:15 Elena Castellani (University of Florence). *Objects, Structures, and Symmetries.*

17:15-18:00 Aitor Bergara (University of the Basque Country) *The Puzzle of Quantum Reality.*

Thursday, October 4th
Jueves, 4 de octubre / Osteguna, Urriak 4

Faculty of Education, Philosophy and Anthropology, University of the Basque Country. Avenida de Tolosa 70, San Sebastián.

Room B: SALA DE JUNTAS. Second Floor / Segundo Piso / Bigarren Solairua

Morning Talks

Chair: Albert Solé (University of Barcelona)

8:45-9:05 Martina Properzi (University of Rome). *The Fundamental Physics Beyond the Standard Model and the Topological Interpretation of Quantum Computing. Ontological Implications.*

9:05-9:25 Diego Romero-Maltrana (Pontificia Universidad Católica de Valparaíso). *Quantum Mechanics as a Framework Theory.*

9:25-9:45 José Nunes Ramalho Croca (University of Lisbon). *Space and Time in Quantum Physics and the Becoming.*

9:45-10:05 Adán Sus (Valladolid University). *Counting Possibilities in Spacetime Theories.*

10:05-10:25 Óscar Castro (University of Tartu). *Perception without Representation on Slime Molds: The Question of Cognition without Nervous System.*

11:30-11:45 COFFEE BREAK. THIRD FLOOR

Morning Lectures

Chair: Gotzon Arrizabalaga (University of the Basque Country)

11:45-12:30 José Ignacio Galparsoro (University of the Basque Country). *Physis y Techné: la Naturaleza de la Técnica.*

12:30-13:15 Xabier Insausti (University of the Basque Country). *Filosofar en Tiempos Precarios.*

13:15-14:00 Ignacio Ayestarán (University of the Basque Country). *Nihilismo, Capital y Mundo: entre Marx y Debord.*

Evening Talks

Chair: José Ignacio Galparsoro (University of the Basque Country)

15:00-15:20 Marta García (University of the Basque Country). *La Filosofía y las 'Dos Culturas': Maneras de Salvar la Dicotomía.*

15:20-15:40 Miquel Company (University of Illes Balears). *La Mente y Su Vínculo con la Naturaleza: Una Propuesta Dennettiana.*

15:40-16:00 Bárbara Jiménez (University of Leeds). *Naturaleza, Verdad y Belleza en Darwin.*

16:00-16:20 Luis Garagalza and Michael Marder (University of the Basque Country). *Las Raíces de la Physis.*

Thursday, October 4th
Jueves, 4 de octubre / Osteguna, Urriak 4

Faculty of Education, Philosophy and Anthropology, University of the Basque Country. Avenida de Tolosa 70, San Sebastián.

Room C: SEMINARIO DE FILOSOFÍA. Second Floor / Segundo Piso / Bigarren Solairua

Morning Talks

Chair: Kevin Coffey (New York University, Abu Dhabi)

- 8:45-9:05 Ekai Txapartegi (University of the Basque Country). *The Physics of Chroma.*
9:05-9:25 Michael Bourke (British Columbia Institute of Technology). *Intentionality and Nature.*
9:25-9:45 Mario Hubert (Columbia University). *Nothing Exists, but Thank God it's Epistemic: Why the PBR-Theorem is not Restricted by the Ontological Models Framework.*
9:45-10:05 Oliver Milne (National University of Ireland). *Putnam's Conceptual Relativity and the Faulty Foundations of Ontology.*
10:05-10:25 Aldo Filomeno (Institute of Philosophy, Academy of Sciences of the Czech Republic). *Statistical Necessity as Physical Necessity.*

11:30-11:45 COFFEE BREAK. THIRD FLOOR

Evening Talks

Chair: Ekai Txapartegi (University of the Basque Country)

- 15:00-15:20 Kevin Coffey (New York University, Abu Dhabi). *The Ontology of Mass and Energy in Special Relativistic Particle Dynamics.*
15:20-15:40 Manuel Pretel-Wilson. *The Schism in Physics since Solvay 1927: Determinism versus Indeterminism?*
15:40-16:00 Vicent Picó (University of Valencia). *The Primitive Ontology of Classical Mechanics and Bohmian Mechanics.*
16:00-16:20 Mamuka Dolidze (Tbilisi State University). *Quantum Theory and Stream of Consciousness in Modern Literature.*

Friday, October 5th
Viernes, 5 de octubre / Ostirala, Urriak 5

Faculty of Education, Philosophy and Anthropology, University of the Basque Country. Avenida de Tolosa, 70, San Sebastian.

Room A: SALÓN DE GRADOS. Second Floor / Segundo Piso / Bigarren Solairua

Morning Lectures

Chair: Tomás Calvo (Complutense University of Madrid)

9:15-10:00 Demetra Sfondoni-Mentzou (Aristotle University of Thessaloniki). *Aristotle's Direct Realism and our Knowledge of the External World.*

10:00-10:45 Gerhard Seel (University of Bern). *Can Science Decide between Determinism and Indeterminism?*

10:45-11:30 Francis Wolff (École Normale Supérieure). *Why There Was No Galileo in Ancient Greece?*

11:30-11:45 COFFEE BREAK. THIRD FLOOR

Chair: Demetra Sfondoni-Mentzou (Aristotle University of Thessaloniki)

11:45-12:30 Tim Maudlin (New York University). *The Idea of a Canonical Presentation of a Physical Theory.*

12:30-13:15 Carlo Rovelli (Aix-Marseille Université). *The Stratified Notions of Space and Time and Quantum Gravity.*

13:15-14:00 David M. Wallace (University of Southern California). *On the Plurality of Quantum Theories: Intertheoretic Relations in Quantum Theory and their Implications for the Quantum Measurement Problem.*

Special Session 16:30-17:30

Chair: Carlo Rovelli (Aix-Marseille Université)

Many-worlds: from Anaximander to Hugh Everett. Colloquium with David M. Wallace (University of Southern of California).

Friday, October 5th
Viernes, 5 de octubre / Ostirala, Urriak 5

Faculty of Education, Philosophy and Anthropology, University of the Basque Country. Avenida de Tolosa 70, San Sebastián.

Room B: SALA DE JUNTAS. Second Floor / Segundo Piso / Bigarren Solairua

Morning Talks

Chair: Íñigo Ongay (University of Deusto)

9:00-9:20 Laura Bujalance (Cela Open Institute (UCJC)). *Continuity and Discontinuity. From the Greek Debate on Physical Action to the Debate in Quantum Physics about Ontological Entities.*

9:20-9:40 Peter Kinane (Independent Researcher). *E-PS: Coherent Philosophy-Physics, Including Quantum Dynamics and Macro World.*

9:40-10:00 Philipp Berghofer (University of Graz). *Ontological Implications of Quantum Field Theory: Fields as the Building Blocks of the Universe?*

10:00-10:20 Sergei Fokin and Rafael Aricieaga Paredes (Escuela Normal No. 3 de Toluca). *White Spot in the Evolution of Quantum Mechanics.*

11:30-11:45 COFFEE BREAK. THIRD FLOOR

Evening Talks

Chair: Laura Bujalance (Cela Open Institute (UCJC))

15:00-15:20 Íñigo Ongay (University of Deusto). *Simplicity, Plurality and Nature: A Machian Approach to the (dis)unity of Science and Nature.*

15:20-15:40 Jesús Zamora-Bonilla (UNED, Madrid). *A Deflationary Ontology for Scientific Realism.*

15:40-16:00 Martin King (University of Bonn). *Ontological Aspects of Effective Field Theories.*

Friday, October 5th
Viernes, 5 de octubre / Ostirala, Urriak 5

Faculty of Education, Philosophy and Anthropology, University of the Basque Country. Avenida de Tolosa, 70 San Sebastián.

Room C: SEMINARIO DE FILOSOFÍA. Second Floor / Segundo Piso / Bigarren Solairua

Morning Talks

Chair: Rita María Pérez (University of the Basque Country)

9:00-9:20 Ignacio García (University of Salamanca). *Dos Conjeturas Científicas de Anaximandro y Anaxímenes.*

9:20-9:40 Ignacio Pajón (Complutense University of Madrid). *Ontología de la Phýsis en Pirrón y Sexto Empírico.*

9:40-10:00 Bayi Bayi Molongwa (INADEP-African Institute for Prospective Studies). *La Crisis de los Presupuestos que Sustentan la Física Griega a la Luz del NWN (U) Egipcio.*

11:30-11:45 COFFEE BREAK. THIRD FLOOR

Evening Talks

Chair: Ignacio García (University of Salamanca)

14:40-15:00 Núria Estrach (Autonomous University of Barcelona). *Existe un Determinismo Natural de la Maldad Humana: Estado de la Cuestión.*

15:00-15:20 Pablo López (Estudio Teológico Agustiniiano de Valladolid). *Ontología de la Naturaleza Humana: el Ser que ante Todo Está.*

15:20-15:40 Rita María Pérez (University of the Basque Country). *Naturaleza del Discurso Publicitario.*

15:40-16:00 Juan Bautista Bengoetxea and José Luis Luján (Universitat de les Illes Balears). *Naturaleza (Physis) y Prácticas Basadas en Pruebas Empíricas: Modelos, Simulaciones Moleculares y Alimentos Saludables.*

16:00-16:20 César Jesús Alcázar (University of the Basque Country). *Trabajo y Naturaleza Humana en Marx a la Luz Del Conocimiento como Nueva Fuente de Producción.*

Saturday, October 6th
Sábado, 6 de Octubre / Larunbata, Urriak 6

Chillida-Leku Museum

10:30 Closing Ceremony / Ceremonia de clausura / Amaiera ekitaldia

Chair: **Javier Echeverría** (*Ikerbasque*)

1) Closing talks.

10.30-11:30 *Greek Thought and Contemporary Physics: the Case of Aristotle's Physics*.
Colloquium with the physicist **Carlo Rovelli** (Aix-Marseille University).

Speakers: **Tomás Calvo** (Complutense University of Madrid)
Gerhard Seel (University of Bern)
Francis Wolff (École Normale Supérieure)

11:30-12:30 **Juan José Gómez-Cadenas** (DIPC) *Is the Neutrino its Own Antiparticle? (What We Talk about when We Talk about Neutrinos)*.

2) The session will finish with a closing speech by Prof. **Gerardus 't Hooft** (Nobel Prize of Physics. Utrecht University).

Concert / Concierto / Kontzertua

PIANO CONCERT. Works presented by composers:

Tomás Marco
José María Sánchez-Verdú
Mauricio Sotelo
Gabriel Erkoreka
Pianist: Isabel Puente

Appetizer

XIII INTERNATIONAL ONTOLOGY CONGRESS

International Scientific Committee:

A. Aspect (Paris); P. Aubenque (Paris) F.J. Ayala (California); J. Bouveresse (Paris); †E. Chillida (San Sebastián); A. Grünbaum (Pittsburgh); †W. Lamb (Arizona); T. Marco (Madrid); U. Moulines (München); †I. Prigogine (Bruxelles); †H. Putnam (Harvard); C. Rovelli (Marseille). **Coordinator:** V. Gómez Pin (Barcelona).

Advisory Committee for the XIII Edition

Anouk Barberousse (Université Paris-Sorbonne), Tomás Calvo (Universidad Complutense Madrid), Alberto Cordero (Queen's College, New York), Joseph Dauben (Graduate Center, CUNY, New York), Javier Echeverría (Ikerbasque, San Sebastián), Miguel A. Ferrero (Universidad de Oviedo), Julián Pacho (University of the Basque Country, San Sebastián), Demetra Sfondoni-Mentzu, (Aristotle University of Thessaloniki), Francis Wolff (ENS, Paris).

Organizing Committee:

Javier Aguirre (UPV San Sebastián), Gotzon Arrizabalaga (UPV San Sebastián), Juan Ramón Makuso (San Sebastián), José Ignacio Galparsoro (UPV San Sebastián), Nicanor Ursúa (UPV San Sebastián), Bárbara Jiménez (University of Leeds), Pedro Uribe (UPV San Sebastián), Daniel Gamper (UAB), Víctor Gómez Pin (UAB), Albert Solé (Universidad de Barcelona). Web: Xabier Lanaspá.

Organizers: University of the Basque Country, Autonomous University of Barcelona, Fundació Paideia, Chillida-Leku Museum.

Contact:

Bárbara Jiménez
Executive Secretary
secretaria@ontologia.info

Postal Address 1: Universidad del País Vasco. Facultad de Educación, Filosofía y Antropología. Avenida de Tolosa, 70. 20018 SAN SEBASTIÁN.

Postal Address 2: Departament de Filosofia, Campus UAB, Edifici "B" Bellaterra (Cerdanyola del Vallès) 08193 BARCELONA.

XIII INTERNATIONAL ONTOLOGY CONGRESS



ORGANIZERS:



IN COOPERATION WITH:



COLLABORATING INSTITUTIONS:

