

## OVERVIEW

### VENUE

Festsaal (Ceremonial Hall) and Boeckl-Saal, Vienna University of Technology

### KEYNOTE SPEAKERS

Yakir Aharonov (Tel Aviv) | Nicolas Gisin (Geneva) | Gerard 't Hooft (Utrecht) | Thanu Padmanabhan (Pune) | Aephraim Steinberg (Toronto) | Howard Wiseman (Brisbane)

### INVITED PRESENTATIONS

Markus Arndt (Vienna) | Peter Barker (London) | Angelo Bassi (Trieste) | Herman Batelaan (Lincoln) | Konstantin Bliokh (RIKEN) | Āaslav Brukner (Vienna) | Ariel Caticha (Albany) | Eric Cavalcanti (Brisbane) | Ana María Cetto (Mexico) | Lajos Diósi (Budapest) | Hans-Thomas Elze (Pisa) | Robert Flack (London) | GianCarlo Ghirardi (Trieste) | Maurice de Gosson (Vienna) | Gerhard Grössing (Vienna) | Yuji Hasegawa (Vienna) | Basil Hiley (London) | Bei-Lok Hu (College Park) | Marian Kupczynski (Québec) | Matt Leifer (Waterloo) | Kristel Michielsen (Jülich) | Theo Nieuwenhuizen (Amsterdam) | Hrvoje Nikolić (Zagreb) | Travis Norsen (Northampton) | Xavier Oriols (Barcelona) | Bill Poirier (Lubbock) | Helmut Rauch (Vienna) | Hans de Raedt (Groningen) | Martin Ringbauer (Brisbane) | Jeff Tollaksen (Orange) | Lev Vaidman (Tel Aviv) | Jan Walleczek (Berlin) | Gregor Weihs (Innsbruck) | Silke Weinfurter (Nottingham)

### ADVISORY BOARD

Ana María Cetto (Mexico) | Lajos Diósi (Budapest) | Hans -Thomas Elze (Pisa) | Maurice de Gosson (Vienna) | Theo Nieuwenhuizen (Amsterdam) | Helmut Rauch (Vienna)

### ORGANIZERS

Gerhard Grössing (Vienna) | Jan Walleczek (Berlin)

### OBJECTIVES

The symposium invites the open exploration of the quantum state as a reality. The resurgence of interest in ontological quantum theory, including both deterministic and indeterministic approaches, challenges long held assumptions and directs focus towards the following questions: Is the world local or nonlocal? What is the nature of quantum nonlocality? If nonlocal, i.e., superluminal, influences exist then why can't they be used for superluminal signalling and communication? How is the role of the scientific observer/agent to be accounted for in realistic approaches to quantum theory? How could recent developments in the field of space-time as an emergent phenomenon advance new insight at this research frontier? What new experiments might contribute to new understanding? These and related questions will be addressed in the context also of a possible „deeper level theory“ for quantum mechanics that interconnects three fields of knowledge: emergence, the quantum, and information.

Could there appear a revised image of physical reality from recognizing new links between emergence, the quantum, and information? The symposium provides a forum for considering (i) current theoretical and conceptual obstacles which need to be overcome as well as (ii) promising developments and research opportunities on the way towards realistic quantum mechanics. Contributions are invited that present current advances in both standard as well as unconventional approaches.

Our Symposium is **open to the public**, with **free attendance**.

### **CALL FOR POSTER APPLICATIONS / SPECIAL POSTER AWARD**

We shall have the opportunity to present the posters for the whole duration of our symposium in the Boeckl-Saal adjacent to the Festsaal. Also, to stimulate the interests of students and postdocs, we shall give 15 travel grants (à 500.- EUR) for selected abstracts submitted. The deadline for the poster abstract submission is the 28th of August, 2015.

Please email poster applications with title and abstract to the conference secretariat:  
[emqm15@mondial-congress.com](mailto:emqm15@mondial-congress.com)

The Proceedings of EmQM15 will be published in: Journal of Physics: Conference Series. For the invited contributions, the following link leads you to the details concerning preparation, submission, and Deadline . Note in particular that the submission deadline is the 31st of January, 2016.