

# Progress and Visions in Quantum Theory in View of Gravity

Bridging foundations of physics and mathematics

October 01 – 05, 2018

## SPEAKERS

**Markus Aspelmeyer** – UNIVERSITY OF VIENNA  
**Časlav Brukner** – IQOQI VIENNA  
**Tian Yu Cao** – BOSTON UNIVERSITY  
**Dirk Deckert** – LUDWIG MAXIMILLIAN UNIVERSITY OF MUNICH  
**Chris Fewster** – UNIVERSITY OF YORK  
**Jürg Fröhlich** – ETH ZURICH  
**Lucien Hardy** – PERIMETER INSTITUTE  
**Olaf Lechtenfeld** – UNIVERSITY OF HANOVER  
**Shahn Majid** – QUEEN MARY UNIVERSITY OF LONDON  
**Gregory Naber** – DREXEL UNIVERSITY  
**Hermann Nicolai** – MPI FOR GRAVITATIONAL PHYSICS  
**Rainer Verch** – LEIPZIG UNIVERSITY

## DISCUSSANTS

**Eric Curiel** – MCMP MUNICH/BHI HARVARD  
**Claudio Dappiaggi** – UNIVERSITY OF PAVIA  
**Detlef Dürr** – LUDWIG MAXIMILLIAN UNIVERSITY OF MUNICH  
**Michael Dütsch** – UNIVERSITY OF GÖTTINGEN  
**Christian Fleischhack** – PADERBORN UNIVERSITY  
**Harald Grosse** – UNIVERSITY OF VIENNA  
**Stefan Hollands** – LEIPZIG UNIVERSITY  
**Bernard Kay** – UNIVERSITY OF YORK  
**Klaas Landsmann** – RADBOUD UNIVERSITY  
**Valter Moretti** – UNIVERSITY OF TRENTO  
**Peter Pickl** – LUDWIG MAXIMILLIAN UNIVERSITY OF MUNICH  
**Nicola Pinamonti** – UNIVERSITY OF GENOVA  
**Karl-Henning Rehren** – UNIVERSITY OF GÖTTINGEN  
**Martin Reuter** – JOHANNES GUTENBERG UNIVERSITY  
**Roderich Tumulka** – UNIVERSITY OF TÜBINGEN  
**Jakob Yngvason** – UNIVERSITY OF VIENNA

## SCIENTIFIC ORGANIZERS

**Felix Finster** – UNIVERSITY OF REGENSBURG  
**Domenico Giulini** – UNIVERSITY OF HANOVER  
**Johannes Kleiner** – UNIVERSITY OF HANOVER  
**Jürgen Tolksdorf** – MPI FOR MATHEMATICS IN THE SCIENCES

## ABSTRACT

The conference focuses on a critical discussion of the status and prospects of current approaches in quantum mechanics and quantum field theory, in particular concerning gravity. In contrast to typical conferences, instead of reporting on the most recent technical results, participants are invited to discuss

- visions and new ideas in foundational physics, in particular concerning foundations of quantum field theory
- which physical principles of quantum (field) theory can be considered fundamental in view of gravity
- new experimental perspectives in the interplay of gravity and quantum theory.

In tradition of the meetings in Blaubeuren (2003 and 2005), Leipzig (2007) and Regensburg (2010 and 2014), the conference brings together physicists, mathematicians and philosophers working in foundations of mathematical physics.

The conference is dedicated to Eberhard Zeidler, who sadly passed away on 18 November 2016. He was the founding director of the Max Planck Institute for Mathematics in the Sciences. With his outstanding knowledge and warm-hearted personality, he helped shape this conference series. Being thankful for all the inspiration he gave us, the organizers aim at keeping alive his scientific visions.

[www.mis.mpg.de/qft2018](http://www.mis.mpg.de/qft2018)



MAX-PLANCK-GESELLSCHAFT

## ADMINISTRATIVE CONTACT

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## REGISTRATION

Further information as well as registration available online.  
 Local Organization Associate:  
 Research Profile Area Mathematical and Computational Sciences