

Quantum Gravity: Physics and Philosophy

October 24 - October 27, 2017

Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette, France

Speakers:

- Costas Bachas
- Michel Bitbol
- Steven Carlip
- Alain Connes
- Erik Curiel
- Dennis Dieks
- Yuval Dolev
- Sebastian de Haro
- Gary Horowitz
- Nick Huggett
- Ted Jacobson
- Claus Kiefer
- Carlo Rovelli
- Gabriele Veneziano
- Tiziana Vistarini

Presentation:

Research in quantum gravity represents a particularly suitable ground for a productive confrontation between physics and philosophy. But for this to become an authentic dialogue, and not a mere epistemological complement to the scientific discourse, it is essential that the dialogue be centred around questions which meet the demands and goals specific to these two disciplines.

The main goal of this workshop is to bring together internationally renowned physicists and philosophers to explore the various possible modes of collaborations enabled by the current status of the theories seeking the unification of quantum mechanics and gravity. It will focus on transversal questions, and more particularly on the principles and methods employed in quantum gravity. We shall try, as far as possible, not to confine the discussions to epistemological clarifications of the “foundations”, but to show instead that the questions at stake might be potentially as important and general in their consequences as were those raised, at the beginning of the 20th century, by the theories of general relativity and quantum mechanics.

Indeed, quantum gravity reactivates long-standing questions about the relation between physical theories and empirical observations, the exact role (foundational or merely heuristic) of “principles”, the identification of the basic objects or structures of a theory (problems of reduction and emergence), the mathematical characterisation of becoming and the meaning of time, the singularity of the object “universe”, the stability of the laws of nature, etc.

The four days of conferences will be organized around the following thematic units: the principles of quantum gravity, black holes, holographic correspondences, quantum cosmology, emergence of spacetime, the status of time in quantum gravity and quantum geometries.

More information is available on the [website of the workshop](#).

Registration:

Participation is free. For lunch, there will be an optional catering service (10€/day). To register, please send an email to erc.philoquantumgravity@gmail.com with your last name, first name and affiliation and indicate whether you wish to use the catering service.

Scientific Committee:

Gabriel Catren, Thibault Damour, Elie During, Federico Zalamea