Centro de Ciencias
de Benasque Pedro Pascual
Spain
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The Workshop Gravity in the Lab will gather leading scientists in theory and experiment who aim at measuring gravitational effects in the laboratory. This includes classical and quantum methods with an open interdisciplinary scope.

The 20th century witnessed the birth of both quantum mechanics and relativity. However, the inability to unify the underlying concepts of these two theories remains one of the biggest unsolved problems in physics.

It has been suggested that table-top experiments may allow the falsification of low-energy consequences of quantum theories of gravity and experiments are underway. There have even been proposals to use quantum systems at small length scales to measure gravitational waves and demonstrate quantum field theory in curved space-time.

The workshop will offer students and researchers lectures that will provide the basic techniques necessary to propose, develop and interpret experiments in the overlap of quantum theory and relativity. Leading scientists will present the latest updates in topics such as measurements of gravitational waves, quantum tests of the equivalence principle, quantum metrology for gravitational fields and space-based quantum experiments.

Organising committee:
Phillippe Bouyer (CNRS)
Ivette Fuentes (University of Vienna)
Mark Kasevich (Stanford University)
Augusto Smerzi (CNR-INO)

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