Gravity: back to Newton

- Newtons' theory of gravity was good enough for over three centuries. Until 1915 nobody thought of amending it: it was in agreement with experiment.

1905: Einstein introduces the Special Theory of Relativity in order to explain the Michelson-Morley experiment.

SR: The laws of physics are "similar" in all inertial reference frames

1914-1926: Bohr et al. introduce quantum mechanics in order to explain the spectra and stability of atoms.

QM: The new mechanics of the "very small"

Since 1930 physicists attempted to put together Special Relativity and Quantum mechanics = Quantum Field Theory. The meeting was initially a disaster: all answers turn out infinite!

It took 45 years to calculate finite numbers and understand the physical meaning of these infinities: this lead to renormalization group

End of Century:the triomph of quantum field theory: the Standard Model of elementary particle interactions.