

## RECENT PROGRESS AND FUTURE DEVELOPMENTS IN GRAVITATIONAL PHYSICS

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After the renaissance of gravitational physics in the sixties of the last century, progress in the field of high precision measurements resulted in new steps in the development of gravitational physics towards the realization of gravitational wave astronomy and, more remotely, the unification of all forces.

The talk summarizes the past and future experimental activities in both areas of gravity. Emphasis will be given to Earth-based and space-borne experiments for (i) testing the foundations of general relativity, particularly the equivalence principle for which Loránd von Eötvös became famous in relativity and the universality of gravitational redshift; (ii) verifying gravitomagnetism with high precision; (iii) revealing the wave content of the gravitational field; and (iv) proving the very existence of black holes. The gravitational wave astronomy will be sketched and schemes for the unification of all forces will be mentioned including a short discussion of cosmology.

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