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Author: Dr. Roberto Peron
INAF-IAPS, Italy

TESTING GRAVITATIONAL DYNAMICS IN THE SOLAR SYSTEM

Abstract

In this talk our current knowledge of the gravitational interaction is discussed in the context of the Solar System dynamics, based on general relativity theory, the best description so far of this interaction. The most important predictions of the theory are briefly discussed in the post-Newtonian approximation, which provides a way of describing also an important set of alternative theories, the so-called metric ones. The Solar System indeed remains a privileged arena for performing precise tests of gravitation, and these tests are often strictly related to the exploration of Solar System itself. A selection of past, ongoing and future tests of the theory and its foundations is presented, giving emphasis on main results and technological requirements, and with an outlook to the near future.