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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Overview -- An Overview of Solar System Gravitational Physics: The Theory—Experiment Interface -- Determination of the Gravitational Constant -- The Lense—Thrirring Effect -- The Lense—Thirring Effect: From the Basic Notions to the Observed Effects -- Gravity Probe B: Countdown to Launch -- Gravitomagnetism and the Clock Effect -- Spinning Relativistic Particles in External Fields -- Detection of Gravitational Waves -- The GEO 600 Gravitational Wave Detector Status, Research, Development -- Gravitational Radiation Theory and Light Propagation -- Relic Gravitational Waves and Their Detection -- The Equivalence Principle -- Principles of Equivalence: Their Role in Gravitation Physics and Experiments That Test Them -- STEP: A Status Report -- High Sensitive DC SQUID Based Position Detectors for Application in Gravitational Experiments at the Drop Tower Bremen -- Space Accelerometers: Present Status -- Searching for Extra Dimensions and New String-Inspired Forces in the Casimir Regime -- Relativistic Effects in the Motion of the Moon -- Lunar Laser Ranging — A Comprehensive Probe of the Post-Newtonian Long Range Interaction -- Testing Relativistic Gravityand Measuring Solar System Parameters

	via Optical Space Missions -- Clocks and Rods -- Clocks for Length and Time Measurement -- SpaceTime Mission: Clock Test of Relativityat Four Solar Radii -- Pulsar Timing — Strong Gravity Clock Experiments -- Quantum Tests of General Relativity -- Relativistic Phase Shifts for Dirac Particles Interacting with Weak Gravitational Fields in Matter—Wave Interferometers -- Spin in Gravity -- Spin in Special and General Relativity -- Testing the Dirac Equation -- Electromagnetic Field and Gravity -- How Does the Electromagnetic Field Couple to Gravity, in Particular to Metric, Nonmetricity, Torsion, and Curvature?.
Sommario/riassunto	Many new tests of gravity and, in particular, of Einstein's general relativity theory will be carried out in the near future: The Lense--Thirring effect and the equivalence principle will be tested in space; moreover, gravitational waves will be detected, and new atomic interferometers and clocks will be built for measurements in gravitational and inertial fields. New high-precision devices have made these experiments feasible. They will contribute to a better understanding of gravitational physics. Both experimental developments and the theoretical concepts are collected in this volume. Exhaustive reviews give an overall insight into the subject of experimental gravitation.