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Titolo	Introduction to Einstein’s Theory of Relativity [[electronic resource]] : From Newton’s Attractive Gravity to the Repulsive Gravity of Vacuum Energy / / by Øyvind Grøn
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Nota di contenuto	Newton’s Law of Universal Gravitation -- The Special Theory of Relativity -- Vectors, Tensors and Forms -- Accelerated Reference Frames -- Covariant Differentiation -- Curvature -- Einstein’s Field Equations -- The Schwarzschild Spacetime -- The linear field approximation and gravitational waves -- Black Holes -- Sources of gravitational fields -- Cosmology.
Sommario/riassunto	The revised and updated 2nd edition of this established textbook provides a self-contained introduction to the general theory of relativity, describing not only the physical principles and applications of the theory, but also the mathematics needed, in particular the calculus of differential forms. Updated throughout, the book contains more detailed explanations and extended discussions of several conceptual points, and strengthened mathematical deductions where required. It includes examples of work conducted in the ten years since the first edition of the book was published, for example the pedagogically

helpful concept of a "river of space" and a more detailed discussion of how far the principle of relativity is contained in the general theory of relativity. Also presented is a discussion of the concept of the 'gravitational field' in Einstein's theory, and some new material concerning the 'twin paradox' in the theory of relativity. Finally, the book contains a new section about gravitational waves, exploring the dramatic progress in this field following the LIGO observations. Based on a long-established masters course, the book serves advanced undergraduate and graduate level students, and also provides a useful reference for researchers.