



Gravity, Black Holes, and the Very Early Universe: An Introduction to General Relativity and Cosmology

By Chow, Tai L.

Springer, 2007. Book Condition: New. Brand New, Unread Copy in Perfect Condition. A+ Customer Service! Summary:

Preface
 Chapter 1 Basic Ideas of General Relativity
 1.1 Inadequacy of special relativity and Mach's principle
 1.2 Einstein's principle of equivalence
 1.3 Immediate consequences of the principle of equivalence
 The bending of a light beam
 Gravitational shift of spectral lines
 1.4 The curved spacetime concept
 1.5 The principle of general covariance
 1.6 Distance and time intervals
 References
 Problems
 Chapter 2 Curvilinear Coordinates and General Tensors
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 2.2 Parallel displacement and covariant differentiation
 2.3 Symmetry properties of the Christoffel symbols
 2.4 Christoffel symbols and the metric tensor
 2.5 The Geodesics
 2.6 The stationary property of geodesics
 2.7 The curvature tensor
 2.8 Geodesic deviation
 2.9 Laws of physics in curved space
 2.10 The metric tensor and the classical gravitational potential
 2.11 Some useful calculation aids
 References
 Problems
 Chapter 3 Einstein's Law of Gravitation
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 3-2 A heuristic derivation of Einstein's equations
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 Chapter 4 The Schwarzschild Solution
 4-1 The Schwarzschild metric
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 The gravitational redshift
 4-3 Isotropic coordinates
 4-4 Schwarzschild geodesic
 4-5 First integrals of the Schwarzschild solutions
 4-6 Quasiuniform gravitational field
 References
 Problems
 Chapter 5

Reviews

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