

Gravity : Newtonian, post-Newtonian, relativistic

Poisson, Eric, 1965-, author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20463834&lokasi=lokal>

Abstrak

This textbook explores approximate solutions to general relativity and their consequences. It offers a unique presentation of Einstein's theory by developing powerful methods that can be applied to astrophysical systems. Beginning with a uniquely thorough treatment of Newtonian gravity, the book develops post-Newtonian and post-Minkowskian approximation methods to obtain weak-field solutions to the Einstein field equations. The book explores the motion of self-gravitating bodies, the physics of gravitational waves, and the impact of radiative losses on gravitating systems. It concludes with a brief overview of alternative theories of gravity. Ideal for graduate courses on general relativity and relativistic astrophysics, the book examines real-life applications, such as planetary motion around the Sun, the timing of binary pulsars, and gravitational waves emitted by binary black holes. Text boxes explore related topics and provide historical context, and over 100 exercises present challenging tests of the material covered in the main text.