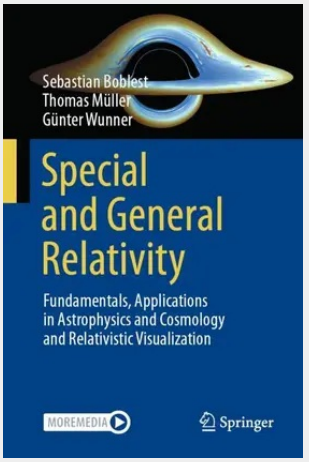
Boblest / Müller / Wunner

Special and General Relativity

Fundamentals, Applications in Astrophysics and Cosmology and Relativistic Visualization



This textbook combines the mathematical foundations of the theory of special and general relativity with numerous applications in physics and astronomy. Besides the discussion of classical experiments that impressively confirm the predictions of the theory of relativity, a special focus is on cosmology, as an important application of general relativity. The discussion of the physics of compact stellar objects, i.e. white dwarfs, neutron stars, and black holes, and a short section on the formation and evolution of stars complement the presentation.

The authors put special emphasis on relativistic visualization. Two chapters give an overview of various visualization techniques in special and general relativity. Examples of relativistic visualization make the predictions of relativity, which so blatantly seem to contradict everyday experience, more tangible and intelligible. The resulting figures and accompanying videos support the understanding of the topics covered in the text. The videos are accessible also via the Springer Nature More Media App.

This edition is the translation and extension of a textbook of the authors written in German. It also includes more recent developments in astrophysics and cosmology, such as the detection and observation of gravitational waves, or the Hubble controversy.

The book is intended for students of physics and related study courses who would like to get an overview of both the theory of relativity and its areas of application. However, the interested layperson, too, will gain a new and deeper insight into relativity and astrophysics.

This textbook combines the mathematical foundations of the theory of special and general relativity with numerous applications in physics and astronomy. Besides the discussion of classical experiments that impressively confirm the predictions of the theory of relativity, a special focus is on cosmology, as an important application of general relativity. The discussion of the physics of compact stellar objects, i.e. white dwarfs, neutron stars, and black holes, and a short section on the formation and evolution of stars complement the presentation. The authors put special emphasis on relativistic visualization. Two chapters give an overview of various visualization techniques in special and general relativity. Examples of relativistic visualization make the predictions of relativity, which so blatantly seem to contradict everyday experience, more tangible and intelligible. The resulting figures and accompanying videos support the understanding of the topics covered in the text. The videos are accessible also via the Springer Nature More Media App. This edition is the translation and extension of a textbook of the authors written in German. It also includes more recent developments in astrophysics and cosmology, such as the detection and observation of gravitational waves, or the Hubble controversy. The book is intended for students of physics and related study courses who would like to get an overview of both the theory of relativity and its areas of application. However, the interested layperson, too, will gain a new and deeper insight into relativity and astrophysics.

53,49 €
49,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783662713310
Medium: Buch
ISBN: 978-3-662-71331-0
Verlag: Springer
Erscheinungstermin: 29.05.2026
Sprache(n): Englisch
Auflage: Erscheinungsjahr 2026
Produktform: Kartoniert
Gewicht: 1007 g
Seiten: 609
Format (B x H): 155 x 235 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)