

Thinking About Space and Time

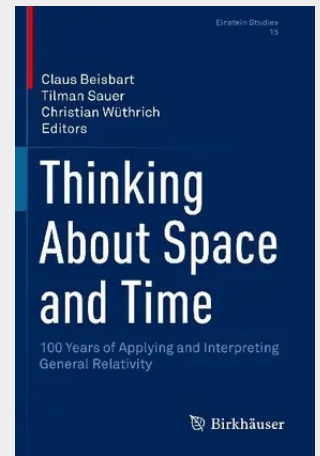
100 Years of Applying and Interpreting General Relativity

This volume offers an integrated understanding of how the theory of general relativity gained momentum after Einstein had formulated it in 1915. Chapters focus on the early reception of the theory in physics and philosophy and on the systematic questions that emerged shortly after Einstein's momentous discovery. They are written by physicists, historians of science, and philosophers, and were originally presented at the conference titled *Thinking About Space and Time: 100 Years of Applying and Interpreting General Relativity*, held at the University of Bern from September 12-14, 2017. By establishing the historical context first, and then moving into more philosophical chapters, this volume will provide readers with a more complete understanding of early applications of general relativity (e.g., to cosmology) and of related philosophical issues. Because the chapters are often cross-disciplinary, they cover a wide variety of topics related to the general theory of relativity. These include:

- Heuristics used in the discovery of general relativity
- Mach's Principle
- The structure of Einstein's theory
- Cosmology and the Einstein world
- Stability of cosmological models
- The metaphysical nature of spacetime
- The relationship between spacetime and dynamics
- The Geodesic Principle
- Symmetries

Thinking About Space and Time will be a valuable resource for historians of science and philosophers who seek a deeper knowledge of the (early and later) uses of general relativity, as well as for physicists and mathematicians interested in exploring the wider historical and philosophical context of Einstein's theory.

Introduction.- Space and Time 62 Years After the Berne Conference.- Einstein's Conflicting Heuristics: The Discovery of General Relativity.- Historical and Philosophical Aspects of the Einstein World.- Stability in Cosmology, from Einstein to Inflation.- The Einstein-Rosen Bridge and the Einstein Podolsky Rosen Argument: Singularities and Separability.- A Raum with a View: Hermann Weyl and the Problem of Space.- Friedman and Some of his Critics on the Foundations of General Relativity.- Interpretations of GR as Guidelines for Theory Change.- Explanation, Geometry, and Conspiracy in Relativity Theory.- Geometry and Motion in General Relativity.- The Metaphysics of Machian Frame-Dragging.- Approximate Local Poincaré Spacetime Symmetry in General Relativity.



128,39 €

119,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783030477844

Medium: Buch

ISBN: 978-3-030-47784-4

Verlag: Springer

Erscheinungstermin: 27.09.2021

Sprache(n): Englisch

Auflage: 1. Auflage 2020

Serie: Einstein Studies

Produktform: Kartoniert

Gewicht: 441 g

Seiten: 267

Format (B x H): 155 x 235 mm

