



# Einstein's Theory: A Rigorous Introduction for the Mathematically Untrained

By Øyvind Grøn, Arne Næss



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This book provides an introduction to the theory of relativity and the mathematics used in its processes. Three elements of the book make it stand apart from previously published books on the theory of relativity.

First, the book starts at a lower mathematical level than standard books with tensor calculus of sufficient maturity to make it possible to give detailed calculations of relativistic predictions of practical experiments. Self-contained introductions are given, for example vector calculus, differential calculus and integrations. Second, in-between calculations have been included, making it possible for the non-technical reader to follow step-by-step calculations. Thirdly, the conceptual development is gradual and rigorous in order to provide the inexperienced reader with a philosophically satisfying understanding of the theory.

The goal of this book is to provide the reader with a sound conceptual understanding of both the special and general theories of relativity, and gain an insight into how the mathematics of the theory can be utilized to calculate relativistic effects.

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## **Einstein's Theory: A Rigorous Introduction for the Mathematically Untrained** By Øyvind Grøn, Arne Næss **Bibliography**

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### Editorial Review

#### Review

From the reviews:

“Einstein’s Theory fits in an unusual place for introductory books on the topic. ... this work reaches the mathematical, theoretical, and conceptual understanding of a graduate course, assuming just basic algebraic skills. ... this is a rare book that can take the motivated reader with an elementary algebra background to a rigorous understanding of general relativity. Summing Up: Recommended. Lower-division undergraduates and general readers.” (E. Kincaid, *Choice*, Vol. 49 (9), May, 2012)

“This book stands apart from other introductory textbooks on general relativity in that it is aimed at non-science educated readers who nonetheless want to get a thorough understanding of this theory. ... The book succeeds quite well in explaining the concepts underlying general relativity in elementary terms without sacrificing mathematical rigor. An additional bonus are the philosophical remarks obviously due to one of the authors being a philosopher himself.” (Helmut Rumpf, *Zentralblatt MATH*, Vol. 1234, 2012)

#### From the Back Cover

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#### About the Author

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