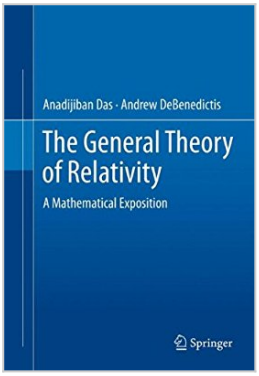

The General Theory of Relativity: A Mathematical Exposition

By Anadijiban Das, Andrew DeBenedictis

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The General Theory of Relativity: A Mathematical Exposition will serve readers as a modern mathematical introduction to the general theory of relativity. Throughout the book, examples, worked-out problems, and exercises (with hints and solutions) are furnished. Topics in this book include, but are not limited to:

tensor analysis
the special theory of relativity
the general theory of relativity and Einstein's field equations
spherically symmetric solutions and experimental confirmations
static and stationary space-time domains
black holes
cosmological models
algebraic classifications and the Newman-Penrose equations
the coupled Einstein-Maxwell-Klein-Gordon equations
appendices covering mathematical supplements and special topics
Mathematical rigor, yet very clear presentation of the topics make this book a unique text for both university students and research scholars.

Anadijiban Das has taught courses on Relativity Theory at The University College of Dublin, Ireland, Jadavpur University, India, Carnegie-Mellon University, USA, and Simon Fraser University, Canada. His major areas of research include, among diverse topics, the mathematical aspects of general relativity theory.

Andrew DeBenedictis has taught courses in Theoretical Physics at Simon Fraser University, Canada, and is also a member of The Pacific Institute for the Mathematical Sciences. His research interests include quantum gravity, classical gravity, and semi-classical gravity.

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Editorial Review

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“The book under review grew out of courses that were taught by the senior author (Das) over the years … . it does serve as a useful reference work for researchers who would prefer a direct exposition of the topics that they are involved with.” (David H. Delphenich, Mathematical Reviews, May, 2013)

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“The General Theory of Relativity: A Mathematical Exposition is … written in a very clear style and the mathematics is done carefully and in detail. There are also a lot of ‘examples, worked-out problems, and exercises (with hints and solutions),’ … so it is certainly a pedagogically sound enterprise well worth the price of admission. I am happy to be able to recommend it.” (Michael Berg, The Mathematical Association of America, August, 2012)

From the Back Cover

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