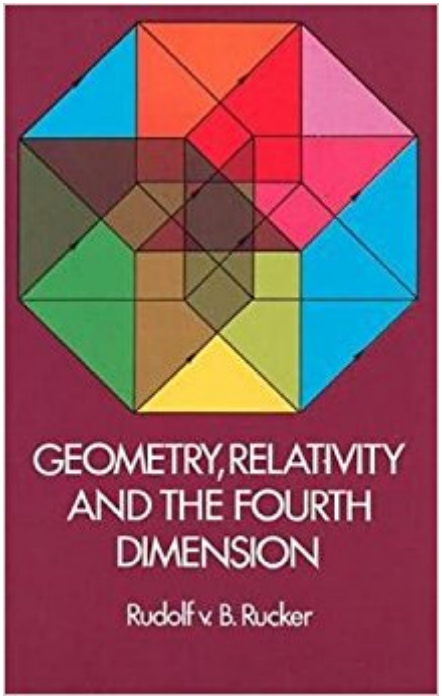
Geometry, Relativity And The Fourth Dimension (Dover Books On Mathematics)



Synopsis

This is a highly readable, popular exposition of the fourth dimension and the structure of the universe. A remarkable pictorial discussion of the curved space-time we call home, it achieves even greater impact through the use of 141 excellent illustrations. This is the first sustained visual account of many important topics in relativity theory that up till now have only been treated separately.Finding a perfect analogy in the situation of the geometrical characters in Flatland, Professor Rucker continues the adventures of the two-dimensional world visited by a three-dimensional being to explain our three-dimensional world in terms of the fourth dimension. Following this adventure into the fourth dimension, the author discusses non-Euclidean geometry, curved space, time as a higher dimension, special relativity, time travel, and the shape of space-time. The mathematics is sound throughout, but the casual reader may skip those few sections that seem too purely mathematical and still follow the line of argument. Readable and interesting in itself, the annotated bibliography is a valuable guide to further study.Professor Rucker teaches mathematics at the State University of New York in Geneseo. Students and laymen will find his discussion to be unusually stimulating. Experienced mathematicians and physicists will find a great deal of original material here and many unexpected novelties. Annotated bibliography. 44 problems.

Book Information

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Customer Reviews

Good book. All elements are describe evenly I suppose. This book might be a bit tough for someone

without background information in geometry. I am a geometer by nature and found this book very appealing. The content is well described and makes for a very fun (boring by most standards), nerdy read to add to my repertoire collection of books. I recommend this book for any curious (well versed in spatial dimensions or geometry) person interested.

Five stars becauce Rucker put a lot into this book, its obvious he cared a great deal about writing this book; the annotated bibliography is an example of this and worth buying the book just read this. Having said that, I found this book very tough. Bits of understanding come through but this is the kind of book you can read and re-read and re-re-read and still be baffled, which is not Ruckers fault it is just the material subject matter.

Not bad, got many things right. But the big concepts are lacking. If a mirror image in dimension x is x-1 then 3d would be a perfect mirror of 4d. To a 3d existence 4d imperceptible. That is not to of course forget that to us the mirror formula could be that [-1] is actually more precise to describe as [-one dimension]. The reason I say this is because if you are in the camp that a fibonacci beauty applies to the cosmic dimension inventory, then perhaps the next dimension "up" or out is the fifth dimension. If this is the case then our 3d world is a mirror image of a 5 d reality the implications are that yes indeed God knows the tick and tack of every sparrow and perceives us much like would a curious child that was given her first ant farm. To an impartial observer of us such as that of a bystander being in the fifth dimension how curious and spectacularly beautiful this universe must look!

In his own introduction the author, Mr. R. Rucker, states, "My goal has been to present an intuitive picture of the curved space-time we call home. There are a number of excellent introductions to the separate topics treated here, but there has been no prior weaving of them into a sustained visual account. I looked for a book like this for many years- and finding none, I wrote it." His dedication has been rewarded, as the text is one of the finer introductory books on the curvature of space time and special relativity.The ’book like this’ as the author calls it, walks the reader through several visual explanations that allow a solid mathematical and graphical explanation of modern physics. This isn’t always a simple explanation, but there is a certain reward to struggling with the concepts before understanding them. In particular, Chapter 4 on time as a higher dimension makes the entire book worth reading, with many fascinating examples and a host of thought-provoking examples, such as "Schrodinger’s Cat."This is a very interesting book which would be of use to anyone who wishes to

push just a little bit further than the typical popular physics text. For those who wish to push even further to solidify their knowledge, there are even questions at the end of each chapter. I highly recommend this book.

I think my brain just can’t quite get the concept... good book.

I had a copy many years ago and wore it out. It became lost and years later I wanted to read it again.. This seller provided a beautiful copy. Thanks!

This is an excellent book for those who like to know the concept of fourth dimension and how the higher dimensions can be created.

An easy read for a Sunday afternoon. Especially if you are into dimensions.

(Dover Books on Mathematics)