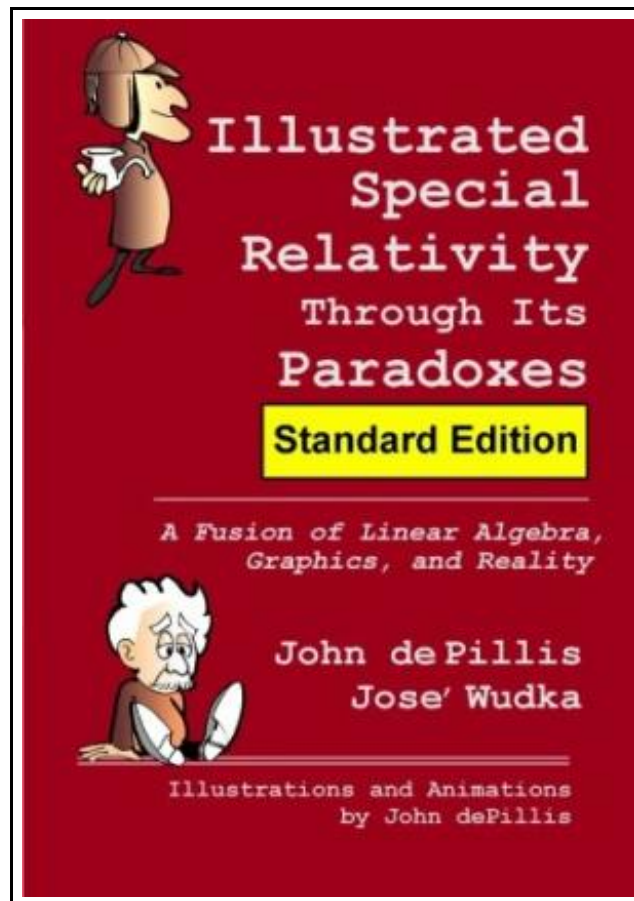


Illustrated Special Relativity Through Its Paradoxes: A Fusion of Linear Algebra, Graphics, and Reality



Filesize: 1.09 MB

Reviews

This written book is excellent. it absolutely was writtern extremely completely and useful. You may like how the article writer write this ebook.

(Dayton Stracke I)

ILLUSTRATED SPECIAL RELATIVITY THROUGH ITS PARADOXES: A FUSION OF LINEAR ALGEBRA, GRAPHICS, AND REALITY



J Depillis Illustrations. Paperback. Book Condition: New. Paperback. 384 pages. Dimensions: 10.0in. x 7.0in. x 0.9in. This accessible work, with its plethora of full-color illustrations by the author, shows that linear algebra --- actually, 2×2 matrices --- provide a natural language for special relativity. The book includes an overview of linear algebra with all basic definitions and necessary theorems. Since Einstein acknowledged his debt to Clerk Maxwell in his seminal 1905 paper introducing the theory of special relativity, we fully develop Maxwells four equations that unify the theories of electricity, optics, and magnetism. Using just two laboratory measurements, these equations lead to a simple calculation for the frame-independent speed of electromagnetic waves in a vacuum. (Maxwell himself was unaware that light was a special electromagnetic wave.) Before analyzing the paradoxes, we establish their linear algebraic context. Inertial frames become (2-dimensional vector spaces) whose ordered spacetime pairs (x, t) are linked by line-of-sight linear transformations. These are the Galilean transformations in classical physics, and the Lorentz transformations in the more general relativistic physics. The Lorentz transformation is easily derived once we show how a novel swiveled line theorem, (a geometric concept) is equivalent to the speed of light being invariant for all observers a (a physical concept). Six paradoxes are all analyzed using Minkowski spacetime diagrams. These are (1) The Accommodating Universe paradox, (2) Time and distance asymmetry between frames, (3) The Twin paradox, (4) The Train-Tunnel paradox, (5) The Pea-Shooter paradox, and the lesser known (6) Bug-Rivet paradox. The Bug-Rivet paradox, animated by the author at Special-Relativity-Illustrated. com, presents another proof that rigidity is incompatible with special relativity. $E=mc^2$ finds a simple derivation using only the relativistic addition of speeds (the Pea-Shooter paradox), conservation of momentum, and a...



[Read Illustrated Special Relativity Through Its Paradoxes: A Fusion of Linear Algebra, Graphics, and Reality Online](#)



[Download PDF Illustrated Special Relativity Through Its Paradoxes: A Fusion of Linear Algebra, Graphics, and Reality](#)

Other Kindle Books



Dont Line Their Pockets With Gold Line Your Own A Small How To Book on Living Large

Madelyn D R Books. Paperback. Book Condition: New. Paperback. 106 pages. Dimensions: 9.0in. x 6.0in. x 0.3in. This book is about my cousin, Billy a guy who taught me a lot over the years and who...

[Read ePub »](#)



Kindle Fire Tips And Tricks How To Unlock The True Power Inside Your Kindle Fire

CreateSpace Independent Publishing Platform. Paperback. Book Condition: New. This item is printed on demand. Paperback. 52 pages. Dimensions: 9.0in. x 6.0in. x 0.1in. Still finding it getting your way around your Kindle Fire Wish you had...

[Read ePub »](#)



By the Fire Volume 1

CreateSpace Independent Publishing Platform. Paperback. Book Condition: New. This item is printed on demand. Paperback. 130 pages. Dimensions: 9.0in. x 6.0in. x 0.3in. By the Fire is an exciting new Bi-Monthly publication featuring new works by...

[Read ePub »](#)



Angels Among Us: 52 Humorous and Inspirational Short Stories: Lifes Outtakes - Year 7

Publishing Inspiration. Paperback. Book Condition: New. This item is printed on demand. Paperback. 132 pages. Dimensions: 9.0in. x 6.0in. x 0.3in. 52 Humorous And Inspirational Short Stories! 52 humorous and inspirational short stories from year 7 of...

[Read ePub »](#)



Multiple Streams of Internet Income

Wiley. Hardcover. Book Condition: New. Hardcover. 279 pages. Dimensions: 9.3in. x 6.2in. x 1.2in. Praise for MULTIPLE STREAMS OF INTERNET INCOME If ever the world needed some help to succeed on the Internet, this is the moment....

[Read ePub »](#)