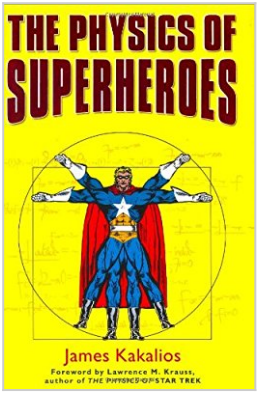

The Physics of Superheroes

By James Kakalios

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If superheroes stepped off the comic book page or silver screen and into reality, could they actually work their wonders in a world constrained by the laws of physics? How strong would Superman have to be to "leap tall buildings in a single bound"? Could Storm of the X-Men possibly control the weather? And how many cheeseburgers would the Flash need to eat to be able to run at supersonic speeds?

Face front, True Believer, and wonder no more! Because in *The Physics of Superheroes* acclaimed university professor James Kakalios shows that comic book heroes and villains get their physics right more often than you think.

In this scintillating scientific survey of super powers you'll learn what the physics of forces and motion can reveal about Superman's strength and the true cause of the destruction of his home planet Krypton, what villains Magneto and Electro can teach us about the nature of electricity—and finally get the definitive answer about whether it was the Green Goblin or Spider-Man's webbing that killed the Wall Crawler's girlfriend Gwen Stacy in that fateful plunge from the George Washington Bridge!

Along the way, *The Physics of Superheroes* explores everything from energy, to thermodynamics, to quantum mechanics, to solid state physics, and Kakalios relates the physics in comic books to such real-world applications as automobile airbags, microwave ovens, and transistors. You'll also see how comic books have often been ahead of science in explaining recent topics in quantum mechanics (with Kitty Pryde of the X-Men) and string theory (with the Crisis on Infinite Earths).

This is the book you need to read if you ever wondered how the Invisible Woman of the Fantastic Four can see when she turns transparent, if the Atom could travel on an electron through a phone line, or if electromagnetic theory can explain how Professor X reads minds. Fun, provocative, and packed with more superheroes and superpowers than an Avengers-Justice League crossover, *The Physics of Superheroes* will make both comic-book fans and physicists exclaim, "Excelsior!"

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Editorial Review

From Publishers Weekly
Starred Review. This terrific book demonstrates a number of important points. First, a subject that everyone "knows" is difficult and boring can, in the hands of a master teacher, be both exciting and fun. Second, it's a myth that only people particularly adept at mathematics can understand and enjoy physics. Third, superhero comic books have socially redeeming qualities. By combining his love for physics with his love of comic books, University of Minnesota physicist Kakalios has written a book for the general reader covering all of the basic points in a first-level college physics course and is difficult to put down. Among many other things, Kakalios uses the basic laws of physics to "prove" that gravity must have been 15 times greater on Krypton than on Earth; that Spiderman's girlfriend, Gwen Stacy, died because his webbing stopped her too abruptly after she plunged from the George Washington Bridge; and that when the Flash runs, he's surrounded by a pocket of air that enables him to breathe. Kakalios draws on the Atom, Iron Man, X-Men, the Ant-Man and the Hulk, among many others, to cover topics as diverse as electromagnetism, quantum mechanics, string theory and thermodynamics. That all of this is accomplished with enough humor to make you laugh aloud is an added bonus. B&w illus.

From the Back Cover
"*The Physics of Superheroes* is clear, rapid, funny and endlessly informative-as if Stan Lee and George Gamow had teamed up to battle the nefarious forces of ignorance."
-Gerard Jones, author of *Men of Tomorrow: Geeks, Gangsters, and the Birth of the Comic Book*

About the Author
James Kakalios is a professor in the School of Physics and Astronomy at the University of Minnesota, where he has taught since 1988, and where his class "Everything I Needed to Know About Physics I Learned from Reading Comic Books" is a popular freshman seminar. He received his Ph.D. in 1985 from the University of Chicago, and has been reading comic books for much longer.

Users Review

From reader reviews:

Stephan Partin:

Spent a free time for you to be fun activity to complete! A lot of people spent their spare time with their family, or their friends. Usually they undertaking activity like watching television, likely to beach, or picnic within the park. They actually doing same thing every week. Do you feel it? Do you need to something different to fill your own free time/ holiday? Might be reading a book can be option to fill your cost-free time/ holiday. The first thing that you'll ask may be what kinds of publication that you should read. If you want to consider look for book, may be the book untitled The Physics of Superheroes can be very good book to read. May be it is usually best activity to you.

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