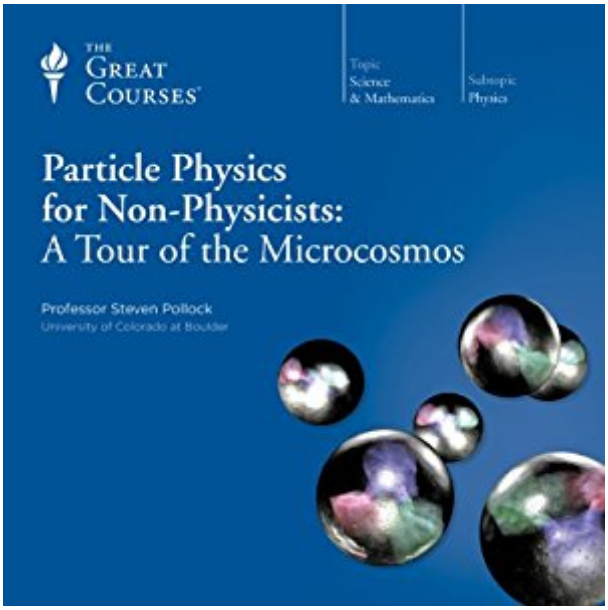
Particle Physics For Non-Physicists: A Tour Of The Microcosmos



Synopsis

Would you like to know how the universe works? Scientists have been asking that question for a long time and have found that many of the answers can be found in the study of particle physics, the field that focuses on those impossibly tiny particles with unbelievably strange names - the hadrons and leptons, baryons and mesons, muons and gluons - so mystifying to the rest of us. And now, in a fascinating and accessible series of 24 lectures, you can take the mystery out of the remarkable field that in only 100 years has unlocked the secrets of the basic forces of nature. Professor Pollock will make you familiar with the fundamental particles that make up all matter, from the tiniest microbe to the sun and stars. And you'll also learn the "rules of the game" - the forces that drive those particles and the ways in which they interact - that underlie the workings of the universe. The lectures have been designed to be enriching for everyone, regardless of scientific background or mathematical ability. Virtually all you'll need as you enter this fascinating world are your curiosity, common sense, and, as Professor Pollock notes, "an open mind for the occasional quantum weirdness." As you move through the lectures, you'll also gain a knowledge of how those particles fit into perhaps the greatest scientific theory of all time: the Standard Model of particle physics; a grasp of key terms like "gauge symmetry," "quantum chromodynamics," and "unified quantum field Theory;" and an appreciation of how particle physics fits in with other branches of physics - including cosmology and quantum mechanics - to create our overall understanding of nature.

Book Information

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Customer Reviews

I'm more of a book learner than a video learner so that I can speed up with the easy stuff, and slow down and repeat the difficult areas. Luckily, since his explanations were so good, there weren't

many difficult areas. He explained all sorts of concepts very well. Some concepts that I didn't understand before like symmetry were well explained. I like how he tells it like it is and not be wowed by some exaggerated headline that says this or that discovery will invalidate all the previous physics theories. I also like how he talks about real physics and doesn't delve into unproven theories like multiple universes. If you decide to order the book version, make sure you receive both volumes. I was only sent one volume, and had to find the other volume on another site.

When I was in high school, I had a strong interest in physics. But my education gradually drifted away from physics over time. Listening to this was a fantastic overview of new development in particle physics since that time. Learning about the latest developments on how particle physicists have learned to see the world differently in the last few decades was a very eye-opening experience. The speaker is very knowledgeable, eloquent, clear, and concise, and he really conveys his own passion for the field. He introduces the important ideas in a very substantive way, in a historical and chronological order, without losing the audience, the educated layman, in mathematical and technical jargon.

This lecture series isn't a Hollywood production. You won't be wowed by specials effects or antics. It takes a straight forward approach to teaching and is geared more towards beginners.As one that doesn't have a formal educated in the field of physics, I found this series to be a useful tool. The fact that I'm almost totally autodidactic in the subject left obvious holes in my knowledge. Going back to the basics and addressing my weaknesses enhanced my ability to grasp more complex theories.

From beginning to end I enjoyed Prof. Pollock's content and animation, once I adjusted to his somewhat Brownian style of presentation. The organization of this course, with the non-physicist in mind, was extremely well thought out and executed. His obvious enthusiasm for this exciting material is altogether enjoyable and truly carries the course. Every lecture was interesting to me. If I had one criticism, it would be that the visuals, though very helpful, were too few. One might have wished TTC and Prof Pollock had made richer use of the range of A/V possibilities available ...even without quantum computing. All in all, highly recommend.

He spends a lot of time talking about symmetry in nature and then jumps into the specifics of particle physics without giving any background.I recommend "The Elegant Universe by Brian Greene

Great DVDs; item exactly as described; fantastic seller! I placed the order and had the DVDs the next day!

Excellent all the way around. I would buy from them again. Very satisfied overall.

Dr. Pollock brings a complex subject to life in terms that clearly explains particle physics. I would recommend this series.

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