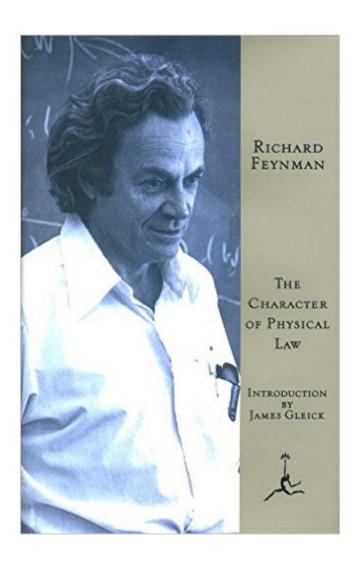
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The Character Of Physical Law (Modern Library)





Synopsis

Like any set of oral reflections, The Character of Physical Law has special value as a demonstration of the mind in action. The reader is particularly lucky in Richard Feynman - one of the most eminent and imaginative modern physicists. In these Messenger Lectures, originally delivered at Cornell University and recorded for television by the BBC, Richard Feynman offers an overview of selected physical laws and gathers their common features into one broad principle of invariance. He maintains at the outset that the importance of a physical law is not "how clever we are to have found it out - but . . . how clever nature is to pay attention to it" and steers his discussions toward a final exposition of the elegance and simplicity of all scientific laws. Rather than an essay on the most significant achievements in modern science, The Character of Physical Law is a statement of what is most remarkable in nature. Feynman's enlightened approach, his wit, and his enthusiasm make this a memorable exposition of the scientist's craft. The law of gravitation is the author's principal example. Relating the details of its discovery and stressing its mathematical character, he uses it to demonstrate the essential interaction of mathematics and physics. He views mathematics as the key to any system of scientific laws, suggesting that if it were possible to fill out the structure of scientific theory completely, the result would be an integrated set of mathematical axioms. The principles of conservation, symmetry, and time irreversibility are then considered in relation to developments in classical and modern physics, and in his final lecture, Feynman develops his own analysis of the process and future of scientific discovery.

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Customer Reviews

This is yet another book that attempts to convey the essence of physics to common people. After explaining exactly why it can't be done, arguing that you'll never get it, Feynman goes right ahead and does it anyway. For each topic, you get a feel for his goal in covering a topic. He explains gravity, yes, to explain gravity, but also because by explaining it he can also convey what essential properties gravity has that other laws have. He also explains the difference between fundamental laws and the consequences of those laws. That the individual laws are reversible, but that probability is responsible for the arrow of time. He spends a lot of time showing the difficult relationship between the basic laws (which are reversible) and the irreversibility of events. Both are characteristics of the physical universe but the latter is not a fundamental law. The latter is a logical outcome of them. So there's a hierarchy, which goes; fundamental laws like gravity at the ground level, consequences of them like irreversibility and surface tension at one level up, organic chemistry further up, then eventually concepts like tree, frog, man, pain, beauty, good and evil each at a higher level, but based upon the levels below them, and difficult to fully predict using only the laws of the lower levels. The levels can be extended up and down. Below gravity is the unification theory of everything. Above good and evil are love, politics, etc. And then he asks, of the extremes on this hierarchy, the fundamental laws and the most abstract concepts, which is closest to God? After asking for patience with his religious reference, he spends little time before revealing his belief that the question is flawed.

This is not one of the most popular Feynman books you can get but it is a short introduction to physics along with Feynman's way of helping people to learn about it. While I wouldn't have this on my list of first Feynman books to get (or physics books for that matter) if you do find it and have an interest in physics then by all means, pick it up. The book is a collection of Lectures Feynman made. He deals with seven topics in fewer than 200 pages. The topics are. 1) Gravitation 2) Mathematics and physics 3) The conservation of energy 4) Symmetry 5) The arrow of time 6) Quantum mechanics 7) How to find new laws Feynman brings a lot to the table in such a small space of time. His examples are usually quite good but some are hit and miss. It was written in 1965 and while most of it is still valid (it is missing over 50 years of physics!) you may find that you can learn about these topics better elsewhere... and that's really the catch. However, I would certainly say you can learn a lot here and the point of getting this book is to get Feynman's take on these subjects. He is still as good today as he was back then. I wouldn't say that if this was your first time coming across physics that Feynman is too advanced, as this book and Feynman's lectures are designed for any

audience with an interest in physics, but that is not to say that it is easy. In fact Feynman goes out of his way to explain that it is hard because it is so counterintuitive. I would say though that if you could get a modern book on cosmology that you will get a better introduction to these topics. In fact several books on cosmology would have you better prepared but in the end you are probably going to want to read Feynman.

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