<<西尔斯当代大学物理>>

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内容概要

《西尔斯当代大学物理（英文版·原书12版）（共2册）》作为著名的世界经典优秀教材，《西尔斯当代大学物理》自1949年首次出版以来，历经半个多世纪，在物理教育的探索与创新方面一直发挥着先导作用，其许多可圈可点的特色在美国乃至世界其他国家，影响了一代又一代的大学师生，是当今世界发行量最大的主流教材之一。

《西尔斯当代大学物理（英文版·原书12版）（共2册）》是第12版，它很好地继承了最畅销的第11版不断创新和精心制作的传统，在充分吸收教育研究优秀思想的基础上，它强化了解题指导，并提供先进、形象的概念教学法，系统性很强的习题，被实际教学证明有效和得到广泛应用的教学辅导与作业在线系统。

《西尔斯当代大学物理（英文版·原书12版）（共2册）》内容丰富、生动，图文并茂，举例鲜活，趣味性强，联系实际密切，强调概念理解，注重能力培养；每章的问题引入法、正文探索式的叙述法以及每节的思考题检测法等多种教学方法并用，能有效调动学生学习的积极性，提高学生的学习效能；原汁原味的英语更能让学生尽享语言学习的美味大餐、
《西尔斯当代大学物理（英文版·原书12版）（共2册）》的主要特色有：
四步解题法：所有例题都采用四步解题法：审题（Identify）、破题（Set up）、求解（Excute）和讨论（Evaluate），这种规范、科学的解题方式十分有利于学生形成思维清晰、表述准确、方法明确的解题习惯，并能逐步获得较强的解决实际问题的能力。

教学紧随练习：练习包括：采用语言、公式、图片等来巩固物理概念的本章生动总结，采用多项选择和排序的理解测验等。

配有“掌握物理”教学辅导与作业在线系统：该系统内容丰富，除了具有超过1200条的自学材料和章后问题的资料库外，还包括专门针对“解题策略”和“理解测验”的解答。
该系统可以在世界范围内为使用《西尔斯当代大学物理（英文版原书12版）（套装共2册）》的师生提供服务。

《西尔斯当代大学物理（英文版·原书12版）（共2册）》主要内容有力学、波动和声学、热学、电磁学、光学、近代物理学等。

《西尔斯当代大学物理（英文版·原书12版）（共2册）》为高等学校理工科各专业学生的大学物理双语教学教材，也是广大高校物理教师非常好的教学辅助资源或参考书。

作者简介

休 D.杨（Hugh D.Young） is Emeritus Professor of Physics at Carnegie Mellon Universityin Pittsburgh， PA.He attended Carnegie Mellon for both undergraduate and grad-uate study and earned his Ph.D.in fundamental particle theory under the direction 0f the late Richard Cutkosky.He joined the faculty of Carnegie Mellon in 1956 and has also spent two years as a Visiting Professor at the University of Califomia at Berkeley. Pro Young ’ S career has centered entirely around undergraduate education.He has written several undergraduate-level textbooks， and in 1 973 he became aCO-authorwithFrancis Sears andMarkZemanskyfortheirwell-knownintroduc-tory texts.witIl their deaths， he assumed full responsibility for new editions 0fthese books until joined by Prof.Freedman for Uiversity Physics. Prof.Young is an enthusiastic skier,climber,and hiker.He also served for sev.eral years as Associate Organist at St.Paul ’ S Cathedral in Pittsburgh， and hasplayed numerous organ recitals in the Pittsburgh area.Prof.Young and his wife Alice usually travel extensively in the summer,especially in Europe and in the desert canyon counthern of southern Utah.

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BRIEF CONTENTS

章节摘录

插图：The development of physical theory requires creativity at every stage.The physicist has to learn to ask appropriate questions， design experiments to try to answer the questions， and draw appropriate conclusions from the results.Fig-ure 1～shows two famous experimental facilities. Legend has it that Galileo Galilei （1564-1642）dropped fight and heavy objects from the top ofthe Leaning Tower ofPisa（Fig.1.1a）to find out whether meir rates of fall were the same or different.Galileo recognized that only experi.mental investigation could answer this question.From examining the results of his experiments（which were actually much more sophisticated than in the leg.end），he made the inductive leap to the principle， or theory， that the acceleration of a falling body is independent of its weight. The development of physical theories such as Galileo ’s is alwaysa two.way process that starts and ends with observations or expedmen~.This development often takes an indirect path， with blind alleys， wrong guesses， and the discarding of unsuccessful theories in favor of more promising Ones.-Physics is not simply a collection of facts and princil；}les；it is also the process by which we arrive at gen.eral principles that describe how the physical universe behaves. No theory is ever regarded as the final or ultimate truth.The possibility always ”exists that new observations will require that a theory be revised or discarded.It isin t11e nature of physical theory that we can disprove a theory by finding behaviormat 1s inconsistent wlth 1t， but we can never prove that a theory is always correct. Getting back to Galileo， suppose we drop a feather and a cannonball.Thevcertainly do not faU at the same rate.This does not mean that Galileo was wrong；lt means that his theory was incomplete.If we drop the feather and the cannon.ball in a Vacuum to eliminate the effects ofthe air,then they do fall at the samerate.Galileo ’s theory has a range of validity：It applies only to objects for whichthe force exerted by the air（due to air resistance and buoyancy）is much 1ess thanthe weight.Objects like feathers or parachutes are clearly outside this range. Every physical theory has a range of validity outside of which it is not appli， cable.Often a new development in physics extends a principle ’s range of valid-ity.Galileo ’s analysis of falling bodies was greatly extended half a century laterby Newton ’s laws of motion and law of gravitation.

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