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# Principles of Physics

(Third Edition)

## 物理学原理 (下)

(第3版)

Serway & Jewett



清华大学出版社



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# Principles of Physics (Third Edition) A Calculus -Based Text

## 影 印 版 序

本书是一本在微积分基础上的大学物理教材。在选材方面，作者本着“少而精”的原则，和第2版对比，删去了交流电、光学仪器等内容，简化了刚体运动、热力学部分。对重点内容，如力学定律，特别是能量及其转化，电磁学基本定律都做了较详细的讲解。

本书比较贴近现代。最后几章系统扼要地介绍了量子物理、原子物理、核物理和粒子物理，甚至说到了核理论、M-理论，使学生接触到物理学的最前沿。除理论介绍外，还介绍了许多物理学的非常近代的应用，如空间技术、激光技术等。在讲述顺序上也做了些更动，如把氢原子的玻尔模型提前到了力学中的引力和行星运动一章，而相对论也提前到了紧接经典质点力学之后。

本书十分注意联系实际，在书中到处可见有关自然现象、科技应用（特别是现代技术）以及日常生活的实例。为了把物理原理和实际事例更自然更系统地结合起来，本书采用了美国物理学教改项目 IUPP 的“故事线”的设计，把全书内容组织到 8 个“实际背景 (context)”中进行讲解。例如经典力学以“到火星去”为故事线，磁学以“磁悬浮列车”为故事线，热学以“全球变暖”为故事线，现代物理以“和宇宙联系”为故事线等。这种做法对激发学生学习兴趣并使其所获得的知识更系统化都有很大好处。

本书也注意对学生学习方法的指导。在序言之后，就写一段“致学生”，专门对学生提出如何学习物理以及如何使用本教材的建议。例题的讲解都比较详细。从特殊事例中提出一般的解题技巧。在很多例题之后还补出了“本例练习题”作为本例分析方法的应用或扩展。此外，还开辟了“想想物理”、“防止陷阱”、“快速测试”等小栏目，及时向学生提出问题以改进其学习过程，提高学习质量。

总体来讲，本书选材上注重基本，遍及现代；讲解上注意联系实际，突出应用；教学法上考虑得比较周全。全书行文通顺易读，词意准确，插图清晰美观。对我国教师和学生来说，是一本比较好的物理教学参考书，特此推荐影印出版。

张三慧  
清华大学物理系  
2003年8月

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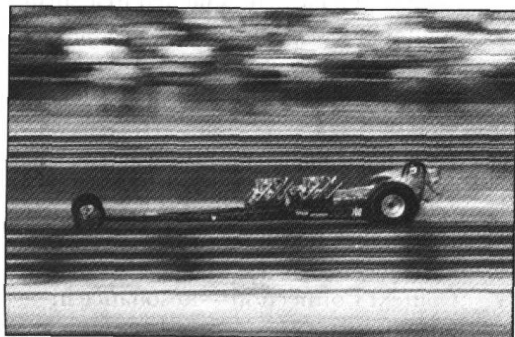
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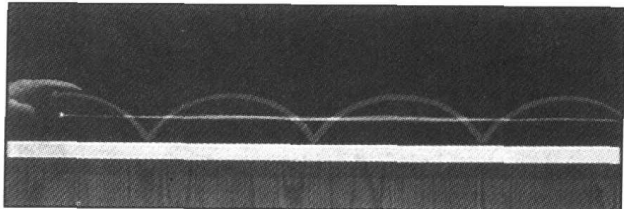
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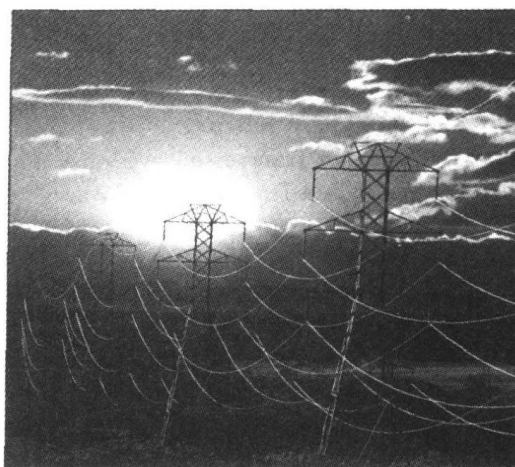
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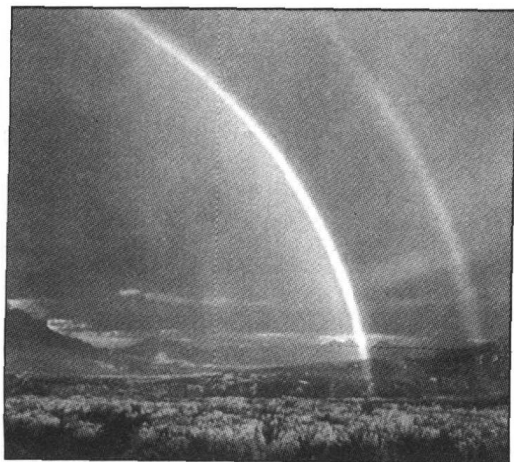
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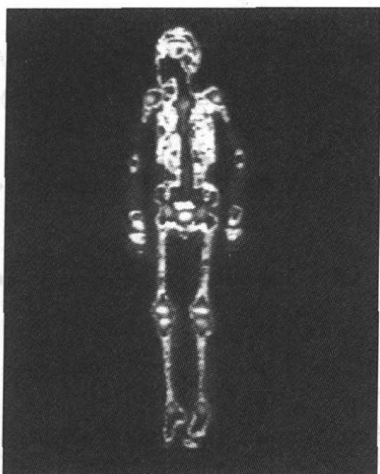
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