



Geometry and Light: The Science of Invisibility (Paperback)

By Ulf Leonhardt, Thomas Philbin, Physics Education Group

Dover Publications Inc., United States, 2010. Paperback. Condition: New. Language: English . Brand New Book. The science of invisibility combines two of physics greatest concepts: Einstein s general relativity and Maxwell s principles of electromagnetism. Recent years have witnessed major breakthroughs in the area, and the authors of this volume -- Ulf Leonhardt and Thomas Philbin of Scotland s University of St. Andrews -- have been active in the transformation of invisibility from fiction into science. Their work on designing invisibility devices is based on modern metamaterials, inspired by Fermat s principle, analogies between mechanics and optics, and the geometry of curved space. Suitable for graduate students and advanced undergraduates of engineering, physics, or mathematics, and scientific researchers of all types, this is the first authoritative textbook on invisibility and the science behind it. The book is two books in one: it introduces the mathematical foundations -- differential geometry -- for physicists and engineers, and it shows how concepts from general relativity become practically useful in electrical and optical engineering, not only for invisibility but also for perfect imaging and other fascinating topics. More than one hundred full-color illustrations and exercises with solutions complement the text.



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