Quasioptical Systems: Gaussian Beam Quasioptical Propogation and Applications

Paul F. Goldsmith

DESCRIPTION

“The increasing commercial use of millimeter wavelengths for remote sensing, communications, and radar systems has driven the need for new low-cost, high performance systems, and with it, the need for quasioptical systems. Combining a general introduction to Gaussian beams and quasioptical propagation with practical applications, QUASIOPTICAL SYSTEMS provides a state-of-the-art treatment of the design of low-loss, broadband systems at microwave to submillimeter wavelengths. The approach presented involved utilizing a beam with a Gaussian distribution of field strength perpendicular to its axis, which in turn propagates in a simple predictable fashion. Features include: A Convenient summary of Gaussian beam propagation formulas; Extensive coverage of present-day quasioptical components and their performance; In-depth coverage of dielectric material uses at millimeter and submillimeter wavelengths; An analysis of lenses and mirrors together with design techniques; and much more! This book will be of key interest to systems designers, antenna engineers, communications systems engineers, and researchers.”

ABOUT THE AUTHOR

Paul F. Goldsmith was appointed Director of the National Astronomy and Ionosphere Center and professor of astronomy at Cornell University in 1993. He is a coinvestigator on the Submillimeter Wave Astronomy Satellite (SWAS), currently scheduled for launch in 1998. Dr. Goldsmith was a founder of Millitech Corporation and was MTT Distinguished Lecturer 1992–1993. He is a Fellow of IEEE.