<<多波混频>>

图书基本信息

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前言

Nonlinear optics covers very broad research directions and has been a very active area of research for about fifty years since the invention of the first laser at the beginning of 1960s.There are several excellent text books devoted to various aspects of nonlinear optics including Nonlinear Optics by R.W.Boyd， Nonlinear Optics by Y.R.Shen ， Quantum Electronics by A.Yariv， Principles of Nonlinear Optical Spectroscopy by S.Mllkainel， and Nonlinear Fibet Optics by G.P.Agrawal.Multi-wave mixings in gases， liquids， and solid materials are important parts of the nonlinear optical process.Typically.lower-order nonlinear optical processes always dorninate since they are Inore efficient than higher-order ones.

内容概要

Multi-Wave Mixing Processes From Ultrafast Polarization Beats to ElectromagneticaUy Induced Transparency discusses the interactions of efficient multi-wave mixing (MWM) processes enhanced by atomic coherence in multilevel atomic systems. It covers topics in five major areas: attosecond and femtosecond polarization beats of four-wave mixing (FWM) processes; heterodyne detection of FWM, six-wave mixing (SWM)and eight-wave mixing (EWM) processes; Raman and Rayleigh enhanced polarization beats; coexistence and interactions of MWM processes via electromagnetically induced transparency (EIT); multi-dressing MWM processes. The book is intended for researchers, advanced undergraduate and graduate students in Nonlinear Optics.

作者简介

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书籍目录

章节摘录

插图：Interaction between the two dressing fields in the nested-cascade scheme is the strongest and that of the parallel-cascade scheme is tile weakest. This conclusion is verified further in the simulated spectra.First in the AT splitting spectrum. The dressing fields of the nested cascade scheme are entangled tightly with each other and have strong interaction. In Fig.8.15 only the inner dressing field E3 can create the primary AT splitting， based Oil which the outer dressing field E4 can create tile secondary AT splitting. On the other hand， for the parallel-cascade scheme， the dressing fields have a weaker interaction and they can directly create two independent AT splittings （see Fig.8.17）.However， for the sequential-cascade scheme the dressing fields can also directly create AT splitting but they have a strong interaction to create the primary and secondary AT splittings， as shown in Fig.8.18 ）.

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