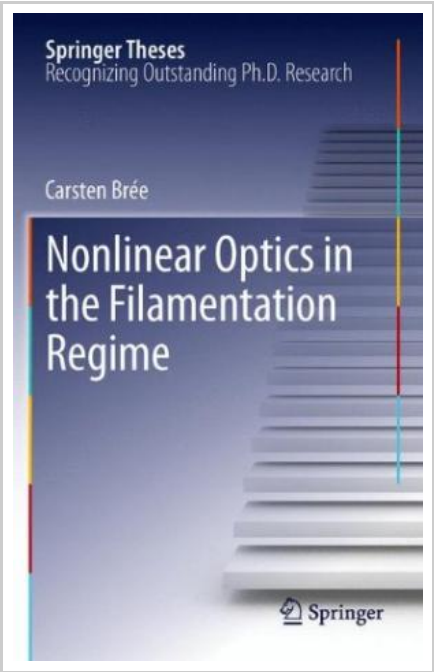

Nonlinear Optics in the Filamentation Regime

By Carsten Brée

Springer-Verlag Gmbh Jul 2012, 2012. Buch. Condition: Neu. Neuware - This thesis provides deep insights into currently controversial questions in laser filamentation, a highly complex phenomenon involving nonlinear optical effects and plasma physics. First, based on the concrete picture of a femtosecond laser beam which self-pinches its radial intensity distribution, the thesis delivers a novel explanation for the remarkable and previously unexplained phenomenon of pulse self-compression in filaments. Moreover, the work addresses the impact of a non-adiabatic change of both nonlinearity and dispersion on such an intense femtosecond pulse transiting from a gaseous dielectric material to a solid one. Finally, and probably most importantly, the author presents a simple and highly practical theoretical approach for quantitatively estimating the influence of higher-order nonlinear optical effects in optics. These results shed new light on recent experimental observations, which are still hotly debated and may completely change our understanding of filamentation, causing a paradigm change concerning the role of higher-order nonlinearities in optics. 125 pp. Englisch.

Reviews

Absolutely among the finest book We have at any time read through. We have read through and that i am sure that i will going to read once more again later on. I found out this book from my i and dad suggested this book to find out.
-- ***Alford McClure***

I actually started reading this article ebook. It is actually packed with knowledge and wisdom Its been printed in an remarkably simple way and it is only after i finished reading this pdf where in fact modified me, alter the way i believe.
-- ***Prof. Uriel Witting***