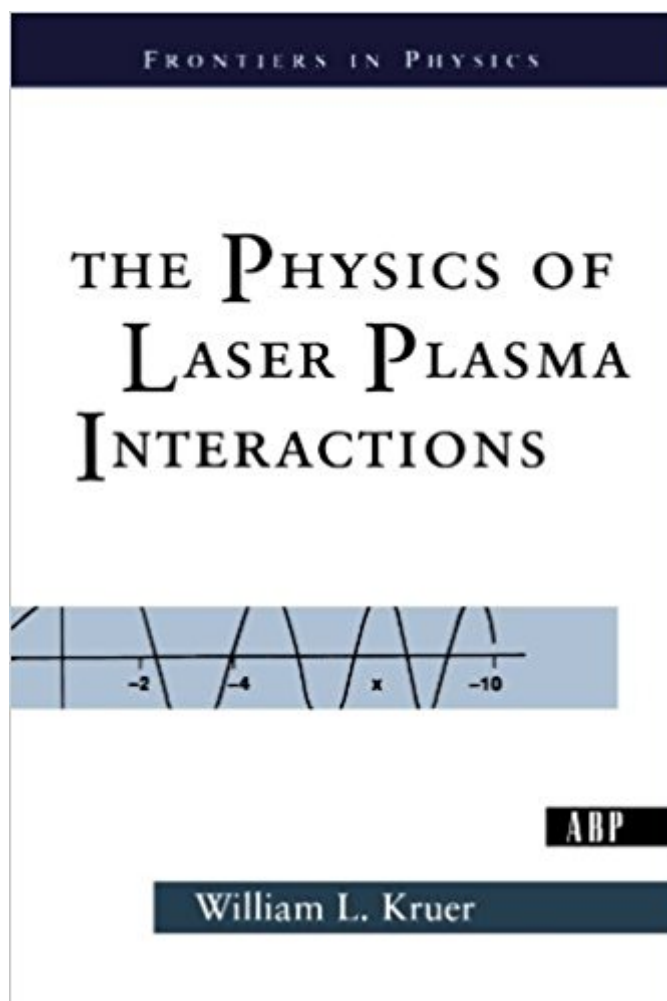


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# The Physics Of Laser Plasma Interactions (Frontiers In Physics)



## Synopsis

Based on a graduate course in plasma physics taught at University of California, Davis, this classic book provides a concise overview and a physically-motivated treatment of the major plasma processes which determine the interaction of intense light waves with plasmas. It also includes a discussion of basic plasma concepts, plasma simulation using particle codes, and laser plasma experiments. This is the most elementary book currently available that successfully blends theory, simulation, and experiment, and presents a clear exposition of the major physical processes involved in laser-plasma interactions. This was also the first book on the topic by anyone involved in the United States Laser Fusion Program. Dr. Kruer has more than 30 years of active participation in this field.

## Book Information

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## Customer Reviews

"A timely and important book on recent developments in the theory of the interaction of intense laser light with plasma." -- Physics Today

William L. Kruer is the Chief Scientist for Plasma Physics in the Inertial Confinement Fusion Theory Division at the Lawrence Livermore National Laboratory. Dr. Kruer received his Ph.d. in Astrophysics from Princeton University in 1969. A Fellow of the American Physical Society and a recipient of its Maxwell Prize, he has published numerous articles on Plasma Theory and

Simulation, Laser Plasma Interactions, and Inertial Confinement Fusion.

Great book

The title pretty much says it all. I feel like this book was originally 2 or 3 times its current length, i.e. the editors made Kruer cut it down to a lowly ~200 pages. The derivation provided is asymptotic to the Classical Electrodynamics, Jackson, level (i.e. terse, much outside work needed), and additionally suffers from a real lack of useful explanation/physical understanding (the first is ok, considering this is a graduate level subject, the second is most definitely not - read: why am I reading this book then?). I would guess this book were written by a math major actually, if it weren't for the fact that it uses naught much more than Maxwell's equations (in Gaussian units, fyi) and the 2-fluid model (i.e. relatively simple). Also, the notation in this book is absolutely atrocious, probably one of the worst examples I have ever seen in any physical science document, ever. Seemingly random subscripts and variable letters appear/change on virtually every line. Variables from two chapters ago are randomly thrown in without explanation, it can really get tedious. All that being said, the book WILL provide some insight, if you naturally have good insight into such topics, and you are willing to spend more time than should be necessary with it. It sucks, I honestly really wanted this book to be my bible, but sadly I feel it falls far short of even a \*decent\* reference.

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