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Caustics for Dissipative Semilinear Oscillations

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Caustics For Dissipative Semilinear Oscillations:

Caustics for Dissipative Semilinear Oscillations Jean-Luc Joly, Guy Métivier, Jeffrey Rauch, 2000 This book is intended for graduate students and research mathematicians interested in partial differential equations *Caustics for Dissipative*

Semilinear Oscillations Jean-Luc Joly, 2014-09-11 This book is intended for graduate students and research mathematicians interested in partial differential equations *Hyperbolic Problems: Theory, Numerics, Applications* Michael Fey, Rolf Jeltsch, 1999-04-01 Infotext Kurztext These are the proceedings of the 7th International Conference on Hyperbolic Problems held in Zürich in February 1998 The speakers and contributors have been rigorously selected and present the state of the art in this field The articles both theoretical and numerical encompass a wide range of applications such as nonlinear waves in solids various computational fluid dynamics from small scale combustion to relativistic astrophysical problems multiphase phenomena and geometrical optics Volltext These proceedings contain in two volumes approximately one hundred papers presented at the conference on hyperbolic problems which has focused to a large extent on the laws of nonlinear hyperbolic conservation Two fifths of the papers are devoted to mathematical aspects such as global existence uniqueness asymptotic behavior such as large time stability stability and instabilities of waves and structures various limits of the solution the Riemann problem and so on Roughly the same number of articles are devoted to numerical analysis for example stability and convergence of numerical schemes as well as schemes with special desired properties such as shock capturing interface fitting and high order approximations to multidimensional systems The results in these contributions both theoretical and numerical encompass a wide range of applications such as nonlinear waves in solids various computational fluid dynamics from small scale combustion to relativistic astrophysical problems multiphase phenomena and geometrical optics

Semi-classical Analysis For Nonlinear Schrödinger Equations Remi Carles, 2008-03-04 These lecture notes review recent results on the high frequency analysis of nonlinear Schrödinger equations in the presence of an external potential The book consists of two relatively independent parts WKB analysis and caustic crossing In the first part the basic linear WKB theory is constructed and then extended to the nonlinear framework The most difficult supercritical case is discussed in detail together with some of its consequences concerning instability phenomena Applications of WKB analysis to functional analysis in particular to the Cauchy problem for nonlinear Schrödinger equations are also given In the second part caustic crossing is described especially when the caustic is reduced to a point and the link with nonlinear scattering operators is investigated These notes are self contained and combine selected articles written by the author over the past ten years in a coherent manner with some simplified proofs Examples and figures are provided to support the intuition and comparisons with other equations such as the nonlinear wave equation are provided **Geometrical Optics and Related Topics**

Ferruccio Colombini, Nicolas Lerner, 2012-12-06 This book contains fourteen research papers which are expanded versions of conferences given at a meeting held in September 1996 in Cortona Italy The topics include blowup questions for quasilinear

equations in two dimensions time decay of waves in LP uniqueness results for systems of conservation laws in one dimension
 concentration effects for critical nonlinear wave equations diffraction of nonlinear waves propagation of singularities in
 scattering theory caustics for semi linear oscillations Other topics linked to microlocal analysis are Sobolev embedding
 theorems in Weyl Hormander calculus local solvability for pseudodifferential equations hypoellipticity for highly degenerate
 operators The book also contains a result on uniqueness for the Cauchy problem under partial analyticity assumptions and an
 article on the regularity of solutions for characteristic initial boundary value problems On each topic listed above one will
 find new results as well as a description of the state of the art Various methods related to nonlinear geometrical optics are a
 transversal theme of several articles Pseudodifferential techniques are used to tackle classical PDE problems like Cauchy
 uniqueness We are pleased to thank the speakers for their contributions to the meeting Serge Alinhac Mike Beals Alberto
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 Richard Melrose Guy Metivier Yoshinori Morimoto and Tatsuo Nishitani The meeting was made possible in part by the
 financial support of a European commission program Human capital and mobility CHRX CT94 044 Handbook of
Differential Equations: Evolutionary Equations C.M. Dafermos, Milan Pokorny, 2009-04-29 Handbook of Differential Equations
 Evolutionary Equations is the last text of a five volume reference in mathematics and methodology This volume follows the
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 series covering evolutionary PDEs New content coverage of DE applications **Hyperbolic Problems** Michael Fey, Rolf
 Jeltsch, 1999 **Asymptotic Analysis and Singularities: Hyperbolic and dispersive PDEs and fluid mechanics** Hideo
 Kozono, 2007 This volume is the proceedings of the 14th MSJ International Research Institute Asymptotic Analysis and
 Singularity which was held at Sendai Japan in July 2005 The proceedings contain survey papers and original research papers
 on nonlinear partial differential equations dynamical systems calculus of variations and mathematical physics Published by

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Revista Matemática Iberoamericana ,2004 Mathematical Reviews ,2005 *Publications Update* World Bank,1996 *Séminaire équations aux dérivées partielles* ,2003 **Singularities and Oscillations** Jeffrey Rauch,Michael Taylor,1997-05-06 This IMA Volume in Mathematics and its Applications SINGULARITIES AND OSCILLATIONS is based on the proceedings of a very successful one week workshop with the same title which was an integral part of the 1994 1995 IMA program on Waves and Scattering We would like to thank Joseph Keller Jeffrey Rauch and Michael Taylor for their excellent work as organizers of the meeting We would like to express our further gratitude to Rauch and Taylor who served as editors of the proceedings We also take this opportunity to thank the National Science Foundation NSF the Army Research Office ARO and the Office of Naval Research ONR whose financial support made the workshop possible Avner Friedman Robert Gulliver v PREFACE The study of singularities and oscillations of waves has progressed along several fronts A key common feature is the presence of a small scale in the solutions Recent emphasis has been on nonlinear waves Nonlinear problems are generally less amenable than linear problems to broad unified approaches As a result there is a justifiable tendency to concentrate on problems of particular geometric or physical interest This volume contains a multiplicity of approaches brought to bear on problems varying from the formation of caustics and the propagation of waves at a boundary to the examination of viscous boundary layers There is an examination of the foundations of the theory of high frequency electromagnetic waves in a dielectric or semiconducting medium Unifying themes are not entirely absent from nonlinear analysis **Bulletin de la Société mathématique de France** Société mathématique de France,2003 *Transactions of the American Mathematical Society* ,1995 **American Book Publishing Record** ,2000 **Catalogue** American Mathematical Society,2000 *International Mathematical News* ,1997 **International Aerospace Abstracts** ,1977

The Engineering Index Annual ,1988 Since its creation in 1884 Engineering Index has covered virtually every major engineering innovation from around the world It serves as the historical record of virtually every major engineering innovation of the 20th century Recent content is a vital resource for current awareness new production information technological forecasting and competitive intelligence The world's most comprehensive interdisciplinary engineering database Engineering Index contains over 10 7 million records Each year over 500 000 new abstracts are added from over 5 000 scholarly journals trade magazines and conference proceedings Coverage spans over 175 engineering disciplines from over 80 countries Updated weekly

Caustics For Dissipative Semilinear Oscillations Book Review: Unveiling the Power of Words

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