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| 1. Record Nr. | UNINA9910739441603321 |
| Titolo | Studies in phase space analysis with applications to PDEs // Massimo Cicognani, Ferruccio Colombini, Daniele Del Santo, editors |
| Pubbl/distr/stampa | New York, : Birkhauser, c2013 |
| ISBN | 1-4614-6348-3 |
| Edizione | [1st ed. 2013.] |
| Descrizione fisica | 1 online resource (xvii, 379 pages) : illustrations |
| Collana | Progress in nonlinear differential equations and their applications ; ; v. 84 |
| Altri autori (Persone) | CicognaniMassimo ColombiniF (Ferruccio) Del SantoDaniele |
| Disciplina | 515.2433 |
| Soggetti | Phase space (Statistical physics) Differential equations, Partial |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references. |
| Nota di contenuto | Preface -- The water-waves equations: from Zakharov to Euler -- On the characterization of pseudodifferential operators (old and new) -- Improved multipolar Hardy inequalities -- The role of spectral anisotropy in the resolution of the three-dimensional Navier-Stokes equations -- Schrödinger equations in modulation spaces -- New maximal regularity results for the heat equation in exterior domains, and applications -- Cauchy problem for some 22 hyperbolic systems of pseudo-differential equations with nondiagonalisable principal part -- Scattering problem for quadratic nonlinear Klein-Gordon equation in 2d -- Global solutions to the 3-D incompressible inhomogeneous Navier-Stokes system with rough density -- The Cauchy problem for the Euler-Poisson system and derivation of the Zakharov-Kuznetsov equation -- L1 estimates for oscillating integrals related to structural damped wave models -- On the Cauchy problem for noneffectively hyperbolic operators, a transition case -- References. |
| Sommario/riassunto | This collection of original articles and surveys, emerging from a 2011 conference in Bertinoro, Italy, addresses recent advances in linear and nonlinear aspects of the theory of partial differential equations (PDEs). Phase space analysis methods, also known as microlocal analysis, have continued to yield striking results over the past years and are now one |

of the main tools of investigation of PDEs. Their role in many applications to physics, including quantum and spectral theory, is equally important. Key topics addressed in this volume include:
 *general theory of pseudodifferential operators *Hardy-type inequalities *linear and non-linear hyperbolic equations and systems *Schrödinger equations *water-wave equations *Euler-Poisson systems *Navier-Stokes equations *heat and parabolic equations Various levels of graduate students, along with researchers in PDEs and related fields, will find this book to be an excellent resource. Contributors T.

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