

1. Record Nr.	UNINA9910768168803321
Autore	Soffer Avy
Titolo	Time Dependent Phase Space Filters : A Stable Absorbing Boundary Condition // Avy Soffer, Chris Stucchio, and Minh-Binh Tran
Pubbl/distr/stampa	Singapore : , : Springer, , [2023] ©2023
ISBN	981-19-6818-7
Edizione	[First edition.]
Descrizione fisica	1 online resource (145 pages)
Collana	SpringerBriefs on PDEs and Data Science Series
Disciplina	518
Soggetti	Differential equations Numerical analysis System theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Introduction -- Absorbing Potentials and Perfectly Matched Layers -- Windowed Fourier Transforms and Space Phase Numerics -- Description of Time Dependent Phase Space Filters -- A More Practical Discussion: How to Choose the Parameters -- The Behavior of Gaussian Framelets under the Free Flow -- Assumptions and Accuracy Estimates -- Discussions on the Assumptions -- Proof of Theorem 7.5.6 -- Proof of Theorems 7.5.4 and 7.5.5 -- Numerical Experiments.
Sommario/riassunto	This book introduces an interesting and alternative way to design absorbing boundary conditions (ABCs) for quantum wave equations, basically the nonlinear Schrödinger equation. The focus of this book is the application of the phase space filter approach to derive accurate radiation conditions for Schrödinger equations. Researchers who are interested in partial differential equations and mathematical physics might find this book appealing.