1.	Record Nr.	UNINA9910841865903321
	Autore	Parviainen Mikko
	Titolo	Notes on Tug-of-War Games and the p-Laplace Equation / / by Mikko Parviainen
	Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
	ISBN	9789819978793
	Edizione	[1st ed. 2024.]
	Descrizione fisica	1 online resource (83 pages)
	Collana	SpringerBriefs on PDEs and Data Science, , 2731-7609
	Disciplina	519.22
	Soggetti	Stochastic analysis Game theory Differential equations Discrete mathematics Stochastic Analysis Game Theory Differential Equations Discrete Mathematics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Chapter 1. Introduction -- Chapter 2. Viscosity Solutions -- Chapter 3. Stochastic Tug-of-War Game -- Chapter 4. Cancellation Method for Regularity of the Tug-of-War with Noise -- Chapter 5. Mean Value Characterizations -- Chapter 6. Further Regularity Methods -- Chapter 7. Open Problems and Comments.
	Sommario/riassunto	This book addresses the interplay between stochastic processes and partial differential equations. More specifically, it focuses on the connection between the nonlinear p-Laplace equation and the stochastic game called tug-of-war with noise. The connection in this context was discovered approximately 15 years ago and has since provided new insights and approaches. These lecture notes provide a brief but detailed and accessible introduction to the subject and to the more research-oriented literature. The book also presents the parabolic case side by side with the elliptic case, highlighting the fact that elliptic and parabolic equations are close in spirit in certain aspects. Moreover, it covers some parts of the regularity theory for these problems.

Graduate students and advanced undergraduate students with a basic understanding of probability and partial differential equations will find this book useful.