1. Record Nr. UNINA9910483899603321 Autore Lewicka Marta **Titolo** A Course on Tug-of-War Games with Random Noise [[electronic resource]]: Introduction and Basic Constructions / / by Marta Lewicka Pubbl/distr/stampa Cham: .: Springer International Publishing: .: Imprint: Springer. . 2020 **ISBN** 3-030-46209-9 Edizione [1st ed. 2020.] Descrizione fisica 1 online resource (ix, 254 pages): illustrations Collana Universitext,, 0172-5939 Disciplina 515.7 Soggetti Potential theory (Mathematics) **Probabilities** Mathematical analysis Analysis (Mathematics) **Potential Theory** Probability Theory and Stochastic Processes **Analysis** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto 1 Introduction -- 2 The linear case: random walk and harmonic functions -- 3 Tug-of-War with noise. Case p [2,) -- 4 Boundary aware tug-of-war with noise. Case p (2,) -- 5 Game-regularity and convergence. Case p (2,) -- 6 Mixed tug-of-war with noise. Case p (1,) -- A Background in probability -- B Background in Brownian motion -- C Background in PDEs. D Solutions to selected exercises --References -- Index. Sommario/riassunto This graduate textbook provides a detailed introduction to the probabilistic interpretation of nonlinear potential theory, relying on the recently introduced notion of tug-of-war games with noise. The book explores both basic and more advanced constructions, carefully explaining the parallel between linear and nonlinear cases. The presentation is self-contained with many exercises, making the book suitable as a textbook for a graduate course, as well as for self-study. Extensive background and auxiliary material allow the tailoring of courses to individual student levels.