Record Nr. UNINA9910299991303321 Autore Chen Wei Titolo Explosive Percolation in Random Networks / / by Wei Chen Berlin, Heidelberg:,: Springer Berlin Heidelberg:,: Imprint: Springer, Pubbl/distr/stampa 2014 3-662-43739-2 **ISBN** Edizione [1st ed. 2014.] Descrizione fisica 1 online resource (75 p.) Collana Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053 519.5 Disciplina Soggetti **Probabilities** Numerical analysis Mathematical physics Probability Theory and Stochastic Processes **Numerical Analysis** Mathematical Applications in the Physical Sciences 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 at the end of each chapters and index. Nota di contenuto Introduction -- Discontinuous Explosive Percolation with Multiple Giant Components -- Deriving An Underlying Mechanism for Discontinuous Percolation Transitions -- Continuous Phase Transitions in Supercritical Explosive Percolation -- Unstable Supercritical Discontinuous Percolation Transitions -- Algorithm of percolation models. This thesis is devoted to the study of the Bohman-Frieze-Wormald Sommario/riassunto percolation model, which exhibits a discontinuous transition at the critical threshold, while the phase transitions in random networks are originally considered to be robust continuous phase transitions. The underlying mechanism that leads to the discontinuous transition in this model is carefully analyzed and many interesting critical behaviors. including multiple giant components, multiple phase transitions, and unstable giant components are revealed. These findings should also be valuable with regard to applications in other disciplines such as

physics, chemistry and biology.