

|                         |  |
|-------------------------|--|
| 1. Record Nr.           | UNINA9910300547003321  |
| Autore                  | Ansermet Diane   |
| Titolo                  | Emergent Superconductivity in Low Dimensions [[electronic resource] /]<br>/ by Diane Ansermet  |
| Pubbl/distr/stampa      | Singapore : , : Springer Singapore : , : Imprint : Springer, , 2018  |
| ISBN                    | 981-13-2941-9  |
| Edizione                | [1st ed. 2018.]  |
| Descrizione fisica      | 1 online resource (194 pages)  |
| Collana                 | Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053   |
| Disciplina              | 537.623  |
| Soggetti                | Superconductivity<br>Superconductors<br>Optical materials<br>Electronic materials<br>Strongly Correlated Systems, Superconductivity<br>Optical and Electronic Materials  |
| Lingua di pubblicazione | Inglese  |
| Formato                 | Materiale a stampa   |
| Livello bibliografico   | Monografia   |
| Nota di contenuto       | Superconductivity: History and Motivations -- Introduction and theory -- Experimental methods -- The quasi-one-dimensional Na <sub>2</sub> Mo <sub>6</sub> Se <sub>6</sub> -- The electronic normal state in Na <sub>2</sub> Mo <sub>6</sub> Se <sub>6</sub> -- Superconducting transition and pairing enhancement by disorder -- Reentrant phase coherence by Josephson coupling -- Summary and Outlook.  |
| Sommario/riassunto      | This book explores the relationship between electronic correlations, dimensionality, inhomogeneities, and superconductivity in low-dimensional systems by studying single crystals of the quasi-one-dimensional Na <sub>2</sub> -Mo <sub>6</sub> Se <sub>6</sub> , composed of MoSe filaments weakly coupled by Na atoms and subject to intrinsic disorder ( $> 0$ ). It shows that the Na <sub>2</sub> -Mo <sub>6</sub> Se <sub>6</sub> displays strong electronic correlations in its normal state, whereas a superconducting ground state emerges from Anderson localized electrons. Two novel behaviors of the superconducting state are observed: first, a disorder induced enhancement of the superconducting transition temperature; second, a reentrant phase coherence with increasing temperature, magnetic field, |

and current. It also analyzes the intrinsic properties of  $\text{Na}_2\text{-Mo}_6\text{Se}_6$  are analyzed to offer a thorough understanding of these phenomena. The emergence of superconductivity in such low-dimensional systems provides a fruitful playground to explore electronic order and correlations.

---