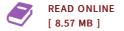


Jahn-Teller and Coulomb correlations in fullerene ions and compounds

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | From isolated ions to metal, insulator, and superconductor phases of alkali fulleride solids | We offer a partial review of some theoretical aspects of the interplay among strong electron-electron Coulomb plus exchange correlations and Jahn-Teller vibronic phenomena in fullerene ions and in solid conductors, superconductors, insulators. The first half of this work covers molecular fullerene ions, their intra-molecular Jahn-Teller effect, Coulomb exchange (Hund's rule) interactions, and molecular vibronic spectroscopies. Several aspects, calculations, and phenomena are discussed also in connection with spectroscopic data. The second part addresses intermolecular electron motion in molecular solid fullerides, with special emphasis given to trivalent cases such as K3C60 and NH3 K3C60, where metallic, superconducting and Mott insulating phases are at play. Dynamical mean field theory approaches to simplified Hamiltonians for this system are discussed in the light of some of the observed phenomenology. In particular NH3 K3C60 and the more recently studied cubic Cs3C60 compounds are discussed as realizations of Mott-Jahn-Teller insulators, which, under pressure, turn into strongly correlated superconductors, sharing besides a "dome-shaped" nonmonotonic dependence | Format: Paperback | Language/Sprache: english | 131 gr | 88 pp.



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