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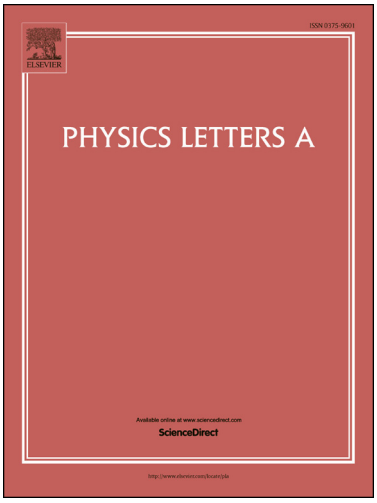

Self-consistent evaluation of effective Coulomb interaction U and its utilization to understand the degree of localization of electrons in vanadium spinels

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Highlights

- Effective Coulomb interaction (U_{eff}) in vanadates is calculated selfconsistently.
- t/U_{eff} (t is the transfer integral) increases with decreasing V-V distance in vanadates.
- Order of degree of localization of electrons is found to be $CdV_2O_4 > MgV_2O_4 > ZnV_2O_4$.
- Our work shows the importance of t/U_{eff} to understand the localization of electrons in vanadates.