1. Record Nr. UNINA9910300370403321

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Titolo	Analysis of the Electric Dipole Moment in the R-parity Violating Supersymmetric Standard Model / / by Nodoka Yamanaka
Pubbl/distr/stampa	Tokyo : , : Springer Japan : , : Imprint : Springer, , 2014
ISBN	4-431-54544-1
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (218 p.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	531.14
Soggetti	Particles (Nuclear physics) Quantum field theory Gravitation Nuclear physics Elementary Particles, Quantum Field Theory Classical and Quantum Gravitation, Relativity Theory Particle and Nuclear Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Introduction -- The Supersymmetry -- Minimal Supersymmetric Standard Model -- R-parity Violation and Phenomenological Constraints -- Backgrounds and Motivations for EDM Search -- Hadron Level Calculation -- Nuclear Level Calculation -- Atomic Level Calculation -- EDM in the Standard Model -- Constraints on Supersymmetric Models from Electric Dipole Moments -- Leading RPV Contributions to the EDM Observables -- Classification of RPV Couplings and RPV Dependence to EDM Observables -- Reappraisal of Constraints on R-parity Violation from EDM at the Leading Order -- Analysis of the Maximal CP Violation of RPV Interactions within 205Tl, 199Hg, 129Xe and Neutron EDM-Constraints Using Linear Programming Method -- Analysis of the RPV Contribution to the P, CP-odd 4-fermion Interaction at the One-loop Level -- Summary and Future Prospects -- Appendix.
Sommario/riassunto	In this thesis the author discusses the phenomenology of supersymmetric models by means of experimental data set analysis of

the electric dipole moment. There is an evaluation of the elementary processes contributing to the electric dipole moments within R-parity-violating supersymmetry, which call for higher-order perturbative computations. A new method based on linear programming is developed and for the first time the non-trivial parameter space of R-parity violation respecting the constraints from existing experimental data of the electric dipole moment is revealed. As well, the impressive efficiency of the new method in scanning the parameter space of the R-parity-violating sector is effectively demonstrated. This new method makes it possible to extract from the experimental data a more reliable constraint on the R-parity violation.