1. Record Nr. UNINA9910789638703321 Autore Perestyuk Nikolai A. Titolo Differential equations with impulse effects [[electronic resource]]: multivalued right-hand sides with discontinuities / / by Nikolai A. Perestyuk ... [et al.] Berlin; ; Boston, : De Gruyter, c2011 Pubbl/distr/stampa **ISBN** 1-283-39862-1 9786613398628 3-11-021816-X Descrizione fisica 1 online resource (324 p.) Collana De Gruyter studies in mathematics, , 0179-0986; ; 40 SK 520 Classificazione Altri autori (Persone) PerestiukN. A (Nikolai Alekseevich) Disciplina 515/.353 Impulsive differential equations Soggetti Lingua di pubblicazione **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Front matter -- Introduction -- Notation -- Contents -- Chapter 1. Impulsive Differential Equations -- Chapter 2. Impulsive Differential Inclusions -- Chapter 3. Linear Impulsive Differential Inclusions --Chapter 4. Linear Systems with Multivalued Trajectories -- Chapter 5. Method of Averaging in Systems with Pulse Action -- Chapter 6. Averaging of Differential Inclusions -- Chapter 7. Differential Equations with Discontinuous Right-Hand Side -- Appendix A. Some Elements of Set-Valued Analysis -- Appendix B. Differential Inclusions --References -- Index Sommario/riassunto Significant interest in the investigation of systems with discontinuous trajectories is explained by the development of equipment in which significant role is played by impulsive control systems and impulsive computing systems. Impulsive systems are also encountered in numerous problems of natural sciences described by mathematical models with conditions reflecting the impulsive action of external

forces with pulses whose duration can be neglected. Differential equations with set-valued right-hand side arise in the investigation of evolution processes in the case of measurement errors, inaccuracy or incompleteness of information, action of bounded perturbations, violation of unique solvability conditions, etc. Differential inclusions

also allow one to describe the dynamics of controlled processes and are widely used in the theory of optimal control. This monograph is devoted to the investigation of impulsive differential equations with set-valued and discontinuous right-hand sides. It is intended for researchers, lecturers, postgraduate students, and students of higher schools specialized in the field of the theory of differential equations, the theory of optimal control, and their applications.