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Descrizione fisica	1 online resource (440 p.)
Collana	De Gruyter studies in mathematical physics ; ; volume 9
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Soggetti	Electromagnetic fields - Mathematics Transients (Electricity)
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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	Magnetic fields of axially symmetrical magnetic systems used for generation of the strong fields (methods of calculation, assessment of the edge effects) -- Calculating formulae and results of numerical estimations of parameters of the field for typical single-turn magnets -- Field diffusion into the conductors and their heating -- Matching of the parameters of solenoids and power supply sources -- Electromagnetic forces and mechanical stresses in multi-turns solenoids. The optimization of multi-layered windings -- Strong magnetic fields generations in multi-turn magnets -- Solenoids with quazi force-free winding -- Generation of strong pulsed magnetic fields in single-turn magnets. Magnetic systems for the formation of pulsed loads -- Generation of ultra high magnetic fields in destructive sungle-turn magnets -- Magnetic cumulation.
Sommario/riassunto	Strong pulsed magnetic fields are important for several fields in physics and engineering, such as power generation and accelerator facilities. Basic aspects of the generation of strong and superstrong pulsed magnetic fields technique are given, including the physics and hydrodynamics of the conductors interacting with the field as well as an account of the significant progress in generation of strong magnetic

fields using the magnetic accumulation technique. Results of computer simulations as well as a survey of available field technology are completing the volume.

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