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	Descrizione fisica	1 online resource (xvii, 286 pages) : digital, PDF file(s)
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		Green's functions
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	Nota di contenuto	Introduction: why the pinch technique -- The Pinch Technique at one loop -- Advanced pinch technique: still one loop -- Pinch technique to all orders -- The pinch technique in the Batalin-Vilkovisky framework -- The gauge technique -- Schwinger-Dyson equations in the pinch technique framework -- Nonperturbative gluon mass and quantum solitons -- Nexuses, sphalerons, and fractional topological charge -- A brief summary of d=3 NAGTs -- The pinch technique for electroweak theory -- Other applications of the pinch technique.
	Sommario/riassunto	Non-Abelian gauge theories, such as quantum chromodynamics (QCD)

or electroweak theory, are best studied with the aid of Green's functions that are gauge-invariant off-shell, but unlike for the photon in quantum electrodynamics, conventional graphical constructions fail. The Pinch Technique provides a systematic framework for constructing such Green's functions, and has many useful applications. Beginning with elementary one-loop examples, this book goes on to extend the method to all orders, showing that the Pinch Technique is equivalent to calculations in the background field Feynman gauge. The Pinch Technique Schwinger-Dyson equations are derived, and used to show how a dynamical gluon mass arises in QCD. Applications are given to the center vortex picture of confinement, the gauge-invariant treatment of resonant amplitudes, the definition of non-Abelian effective charges, high-temperature effects, and even supersymmetry. This book is ideal for elementary particle theorists and graduate students.