

# Download Classical Theory Of Gauge Fields

Book Description: Based on a highly regarded lecture course at Moscow State University, this is a clear and systematic introduction to gauge field theory. For an almost unique choice of solution of the gauge theory equations one can also use covariant gauges like the Lorentz gauge:  $\partial_\mu A^\mu = 0$ . As in Abelian gauge theory, a solution is determined modulo a function satisfying some (nonlinear) equation, but otherwise arbitrary. Hence, it is clear that gauges of the Lorentz type are not suitable for formulation of the Cauchy problem. However, they are very convenient for computations in quantum theory. Based on a highly regarded lecture course at Moscow State University, this is a clear and systematic introduction to gauge field theory. It is unique in providing the means to master gauge field theory prior to the advanced study of quantum mechanics. This volume is intended as a systematic introduction to gauge field theory for advanced undergraduate and graduate students in high energy physics. The discussion is restricted to the classical (non-quantum) theory in Minkowski spacetime. Particular attention has been given to conceptual aspects of field theory, accurate definitions of basic physical notions, and thorough analysis of exact solutions to the equations of motion for interacting systems.