



Resummation and Renormalisation in Effective Theories of Particle Physics: 2016

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Springer International Publishing AG. Paperback. Book Condition: new. BRAND NEW, Resummation and Renormalisation in Effective Theories of Particle Physics: 2016, Antal Jakovac, Andras Patkos, Effective models of strong and electroweak interactions are extensively applied in particle physics phenomenology, and in many instances can compete with large-scale numerical simulations of Standard Model physics. These contexts include but are not limited to providing indications for phase transitions and the nature of elementary excitations of strong and electroweak matter. A precondition for obtaining high-precision predictions is the application of some advanced functional techniques to the effective models, where the sensitivity of the results to the accurate choice of the input parameters is under control and the insensitivity to the actual choice of ultraviolet regulators is ensured. The credibility of such attempts ultimately requires a clean renormalization procedure and an error estimation due to a necessary truncation in the resummation procedure. In this concise primer we discuss systematically and in sufficient technical depth the features of a number of approximate methods, as applied to various effective models of chiral symmetry breaking in strong interactions and the BEH-mechanism of symmetry breaking in the electroweak theory. After introducing the basics of the functional integral formulation of...

Reviews

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