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Sommario	<p>The argument of this thesis is the ultraviolet Spectral Regularization of Quantum Field Theory (QFT). We describe its genesis, its definition and apply it to physically interesting models. One of the main applications of the Spectral Regularization is its application to the Bosonic Spectral Action (BSA), appearing in the noncommutative geometry approach to the Standard Model. Conformal anomaly, appearing in QFT of fermions, moving in a fixed bosonic background under Spectral Regularization is expressed in terms of the BSA. Generalizing this formalism to bosonic degrees of freedom, the phenomena of induced Sakharov gravity and trace anomaly induced inflation are described on an equal footing. The second part of the thesis is devoted to some models, naturally exhibiting the ultraviolet cutoff scale: we compute high momenta asymptotic of BSA, and find that it possesses a phase transition in the ultraviolet, and only at low momenta BSA reproduces the conventional QFT. Afterwards we consider the strong unification generalization of the Standard Model, based on a presence of the Universal Landau Pole for all gauge couplings at the Planck scale. Introducing the physical ultraviolet cutoff scale, such a model naturally resolves the instability problem of the Higgs potential.</p>

Localizzazioni e accesso

<http://memoria.depositolegale.it/>*/http://www.fedoa.unina.it/9900/1/Thesis_final_export.pdf
