

Abstract: In this thesis we study various aspects of effective field theories for Quantum Chromodynamics (QCD). In first two chapters we focus on effective field theory for resonances which interpolates between the low energy field theory and the high energy QCD description. In this theory we study one-loop renormalization: we calculate one-loop corrections to SS-PP correlator and also study more conceptual problem – dynamical generations of new poles in propagators. In chapter four we study scattering amplitudes in the non-linear sigma model which is the leading low energy approximation to QCD. We make a contact with recent discoveries in the context of Yang-Mills theory by constructing recursion relations for all tree-level amplitudes. These relations are important not only conceptually but they also provide an effective tool to determine all tree-level amplitude in a way which is independent on the standard Feynman diagrams expansion.