

# MASS SPECTRUM AND LEPTONIC DECAY CONSTANTS OF PSEUDOSCALAR MESONS

*T.Z. Nasyrov*

Institute of Nuclear Physics,  
Uzbekistan Academy of Sciences  
(*Tashkent, Ulughbek, Uzbekistan*)

## S u m m a r y

A phenomenological model of hadrons has been developed in terms of bilocal meson fields with regard for the renormalization of the wave function of a quark “inside” a meson. A modified Schwinger–Dyson equation for an arbitrary potential has been proposed, the solutions of which are free of ultra-violet divergences but preserve the proper asymptotic properties. A boundary-value problem for the potential of quark–quark interaction in the form of a sum of oscillator and Coulomb-like potentials has been formulated, the solutions of which describe meson spectroscopy and meson–meson interaction. It is shown that, in contrast to other hadron phenomenological models based on the effective action of quantum chromodynamics (QCD), the proposed model describes both the mass spectrum and the leptonic decay constants of pseudoscalar mesons on the same basis and at a good quantitative level.