

# The operator product expansion beyond perturbation theory in QCD

*Thursday, 12 November 2009 17:30 (1:00)*

## Abstract content

### Summary

The Operator Product Expansion (OPE) of current correlators at short distances beyond perturbation theory in QCD, together with Cauchy's theorem in the complex energy plane, is the pillar of the method of QCD sum rules. This technique provides a tool to relate QCD with hadronic physics at low and intermediate energies. It has been in use for over thirty years to determine hadronic parameters, as well as QCD parameters such as the quark masses, and the running strong coupling at the scale of the tau-lepton. QCD sum rules lead to analytic solutions, thus complementing numerical simulations of QCD on the lattice. In this talk, and after a short review of the method, recent results on the quark masses and the strong coupling will be discussed.

**Primary author(s) :** Prof. DOMINGUEZ, CESAREO (UNIVERSITY OF CAPE TOWN, DEPARTMENT OF PHYSICS)

**Presenter(s) :** Prof. DOMINGUEZ, CESAREO (UNIVERSITY OF CAPE TOWN, DEPARTMENT OF PHYSICS)

**Session Classification :** Non perturbative methods in FT II