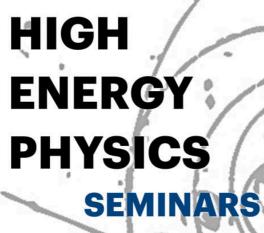
$1\,0\,\,d\,e\,\,d\,e\,z\,e\,m\,b\,r\,o\,\,d\,e\,\,2\,0\,2\,4\,\,-\,\,1\,6\,h\,0\,0\,\,-\,\,S\,a\,l\,a\,\,F\,-\,2\,1\,0\,\,\,(\,I\,F\,S\,C\,/\,U\,S\,P\,)$ 

"High Energy Physics" – QCD coupling from an improved vector-isovector sptectral function using Tau and Electroproduction Data



"QCD COUPLING FROM AN IMPROVED VECTOR-ISOVECTOR SPECTRAL FUNCTION USING TAU AND ELECTROPRODUCTION DATA"

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## **DEZEMBRO - 10**

16h SALA F-210

## **ABSTRACT**

The determination of the Quantum Chromodynamics (QCD) coupling,  $\alpha_s$ , from the theoretical description of inclusive hadronic tau decays, dominated by perturbative QCD, is one of the most precise  $\alpha_s$  extractions from experimental data. In this work, we demonstrate that the vector spectral function can be improved, on the data side, through a combination of tau decay data for the dominant channels and the use of  $e^+e^- \to {\rm hadrons}$  cross sections, related by isospin symmetry, to describe the small contributions of subdominant modes. With this improved vector-isovector spectral function, we will perform a new  $\alpha_s$  determination at the  $\tau\text{-mass}$  scale.

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