

Contribution ID : **44** Type : **Short Talk**

The $\tau \to \pi^- \omega \nu_\tau$ spectral function and its contribution to $\tau \to \pi^- \pi^0 \nu_\tau \gamma$ decay

Thursday, 22 October 2026 15:50 (0:10)

Abstract

We describe the $\omega\pi$ spectral function, measured in the decay $\tau^- \to \pi^- \omega \nu_\tau$ by the CLEO Collaboration, using an importance sampling procedure to explicitly account for the correlation between the parameters of the corresponding form factor. We exhibit the improvement in the uncertainties, compared to the uncorrelated case, and show the agreement with the expected from the measurement of the cross section of $e^+e^- \to \omega\pi$ by SND experiment, which validates the conserved vector current (CVC) hypothesis. The generated data set of the parameters is used to compute the branching ratio of the decay, which is found to be consistent with the reported value by the PDG.

As an application, we consider the ω-channel of the $\tau^- \to \pi^- \pi^0 \nu_\tau \gamma$ process, the leading model dependent contribution in the vector meson dominance approach. We compute the contribution to the long distance electromagnetic correction function $G_{\rm em}(t)$, of the pure ω-channel and its interference with the structure independent part.

Primary author(s) : Mr. ESPARZA, Leonardo (Instituto de Física)

Co-author(s) : Dr. TOLEDO, Genaro (Instituto de Fisica, UNAM); Dr. FORTUNA, Fabiola (IFUNAM); Mr. ROJAS RAMOS, Antonio (Istituto de Física UNAM)

Presenter(s) : Mr. ESPARZA, Leonardo (Instituto de Física)

Session Classification : Short Talks