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Application of LCSR to $\tau^- \to \pi^- \nu_\tau \gamma$

The radiative tau decay ($\tau^- \to \pi^- \nu_\tau \gamma$) involves two contributions: the Internal Bremmstrahlung (IB) contribution and the Structure dependent (SD) contribution. The SD contribution encodes the non-perturbative QCD effects and depends on two form factors (F_A and F_V). Here, I will discuss the computation of these form factors in the framework of light cone sum rules. The momentum transferred square, t in this system is positive and can take values upto m_τ^2, which makes it phenomenologically rich. We have found the structure dependent parameter, γ, (i.e. $\frac{F_A}{F_V}$ at zero momentum transfer) in good agreement with the experimental determination and also present the decay width and invariant mass spectrum in the $\pi - \gamma$ system.

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