

Resonances in hadronic three-body decays of τ

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Hadronic decays of τ lepton provide a unique possibility to study dynamics in a three-body hadronic system. Particularly, $\tau^- \rightarrow \pi^+ \pi^- \pi^- \nu$ and $\tau^- \rightarrow K^- K^+ \pi^- \nu$ gives a clear sample of the $a_1(1260)$ decays. While the pionic system is dominated by the ρ intermediate resonance and the system with kaons shows mostly K^* resonances, the two final states are strongly coupled via the scalar sector and $\pi^+ \pi^- \leftrightarrow K^+ K^-$ transitions. In the talk, I will discuss the consequences of this coupling as a modification of the resonance lineshapes and an appearance of the observable triangle-singularity cusps.

What is your topic?

Hadronic decays

Author: MIKHASENKO, Mikhail (University of Bonn (DE))

Presenter: MIKHASENKO, Mikhail (University of Bonn (DE))

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