

The $\tau^- \rightarrow \pi^- \pi^+ \pi^- \nu_\tau$ decay and the $a_1 \rho\pi$ - Lagrangian

Processes in which the a_1 resonance either dominates ($\tau^- \rightarrow \pi^- \pi^+ \pi^- \nu_\tau$, $K^+ \rightarrow \pi^+ l^+ l^-$, $e^+ e^- \rightarrow 4\pi$) is supposed to play an important role (photon and dilepton production from a meson gas) are linked together using the meson dominance (MD) hypothesis. The mixing angle of a two-part $a_1 \rho\pi$ - Lagrangian is first fixed together with the mass and width in the a_1 propagator by fitting the observed three-pion mass spectrum in the $\tau^- \rightarrow \pi^- \pi^+ \pi^- \nu_\tau$ decay.

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