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The $\tau - \to \pi - \pi + \pi - \nu \tau$ decay and the a1 $\rho \pi$ - Lagrangian

Processes in which the a1 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) hypotestis. The mixing angle of a two-part a1 $\rho\pi$ - Lagrangian is first fixed together with the mass and width in the a1 propagator by fitting the observed three-pion mass spectrum in the $\tau - \rightarrow \pi - \pi + \pi - \nu\tau$ decay.

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