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Partial wave analysis of the $\tau \rightarrow 3\pi\nu_\tau$ decay at Belle

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The COMPASS experiment saw a potential new hadron resonance, the $a_1(1420)$, that does not fit into the quark model. Its existence can be independently verified in the semi-leptonic decay of $\tau^- \rightarrow \pi^- \pi^- \pi^+ \nu_\tau$. Also, such a study can reveal a clear picture on the $a_1(1260)$ axial vector meson parameters, and test the presence of the pseudoscalar and spin-exotic contributions. Moreover, the results of the study can be used later in the measurements of the τ electric and magnetic dipole moments and τ Michel parameters. We present the preliminary results of the $\tau^- \rightarrow \pi^- \pi^- \pi^+ \nu_\tau$ decay with the Belle detector at the KEKB energy-asymmetric e^+e^- collider using partial-wave analysis technique.

In-person participation

Yes

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