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φ → 3π and φπ0 transition form factor from Khuri-Treiman equations

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This abstract presents a thorough analysis of the φ → 3π decay amplitude, including a study of its behavior using different phase shift parametrizations. Based on recent experimental results, we delve into the intricacies of this decay process and also explore the φπ0 transition form factor. By employing the Khuri–Treiman equations approach, we establish a strong agreement between the Dalitz-plot parameters linked to the φ → 3π decay. These parameters, obtained from an amplitude that has undergone a specific subtraction, align closely with the latest findings from the KLOE experiment. Moreover, our investigation unveils insights into the transition form factor for φπ0, especially in the context of lower and moderate energy levels. Our analysis of the φ(1020) → 3π amplitude enables us to deduce this form factor, which notably matches experimental data from KLOE and BaBar experiments. This remarkable consistency highlights the excellent fit between our developed theoretical framework and the observed behaviors of the φ(1020) meson dynamics.

session

D. Hadron Decays

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