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Calculation of hyperon transition form factors from two-point functions using the Feynman-hellmann method

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Theoretical calculations of the transition form factors of the hyperons are an important component of the determination of the CKM matrix elements. These calculations historically have been performed using ratios of lattice three point functions and two-point functions to extract the form factors, this requires the careful balancing of control over excited states and the preservation of a strong signal. We present a novel method which uses the Feynman-Hellmann method to relate a shift in energy due to a perturbation to the required form factors, this method requires only the calculation of two-point functions. The formalism of this Method is expanded on in the presentation by R. Horsley, the details of the numerical computation and the results of the Sigma to nucleon transition will be presented here.

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