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## Quasi-degenerate baryon energy states, the Feynman–Hellmann theorem and transition matrix elements

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The standard method for determining matrix elements in lattice QCD requires the computation of three-point correlation functions. This has the disadvantage of requiring two large time separations: one between the hadron source and operator and the other from the operator to the hadron sink. Here we consider an alternative formalism, based on the Dyson expansion leading to the Feynman-Hellmann theorem, which only requires the computation of two-point correlation functions. Both the cases of degenerate energy levels and quasi-degenerate energy levels which correspond to diagonal and transition matrix elements respectively are considered in this formalism. Numerical results for the Sigma to nucleon transition are presented in a further contribution by M. Batelaan.

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