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Nucleon axial formfactors from lattice QCD

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A precise knowledge of nucleon axial formfactors is needed for the new generation of terrestrial neutrino experiments. This is particularly challenging due to increased contamination, in this sector, from excitations, in particular from $N\pi$ scattering states. Transitions from a N to a $N\pi$, mediated by an axial current are also interesting themselves, as these can be related to neutrino induced pion production. We explain how we compute the relevant Wick contractions, combining stochastic and sequentual all-to-all propagator techniques. We then employ the generalized eigenvalue approach to extract the energy levels and matrix elements of interest.

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