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Investigation of πN contributions to nucleon matrix elements

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We investigate an improved method to extract nucleon matrix elements from lattice 3-point functions and generalized eigenvalue problem with nucleon and pion-nucleon interpolating fields. Our method avoids the costly three-point functions with 2-hadron interpolators at both source and sink. We demonstrate minimization of excited state contamination in matrix elements of the scalar, vector, pseudoscalar, axial, and tensor currents and discuss our results based on two twisted mass gauge field ensembles and 131 MeV and 346 MeV.

Primary authors: ALEXANDROU, Constantia (University of Cyprus and The Cyprus Institute); PITTLER, Ferenc (The Cyprus Institute); KOUTSOU, Giannis (The Cyprus Institute); PETSCHLIES, Marcus (U. Bonn); LI, Yan (University of cyprus)

Presenter: LI, Yan (University of cyprus)

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