

# Nucleon axial structure from lattice QCD: Controlling pion pole enhanced excited states

*Thursday, December 3, 2020 9:00 AM (1 hour)*

We present a new analysis method that allows you to understand and model excited state contributions in observables that are dominated by a pion pole. We apply this method to extract axial and (induced) pseudoscalar nucleon isovector form factors, which satisfy the constraints due to the partial conservation of the axial current up to expected discretization effects. Effective field theory predicts that the leading contribution to the (induced) pseudoscalar form factor originates from an exchange of a virtual pion, and thus exhibits pion pole dominance. Using our new method, we can recover this behavior directly from lattice data.

(Work in collaboration with Gunnar Bali, Lorenzo Barca, Sara Collins, Michael Gruber, Marius Löffler, Andreas Schäfer, Wolfgang Söldner, Simon Weishäupl and Thomas Wurm.)

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