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From QCD's n-point functions to nucleon resonances

Monday 29 August 2016 18:00 (30 minutes)

I will present recent progress in the calculation of nucleon resonances using the framework of Dyson-Schwinger and Bethe-Salpeter equations. The resulting mass spectra are obtained both from the three-body bound-state equation as well as its quark-diquark approximation starting from the level of QCD's propagators and vertices. I will outline how a better understanding of these n-point functions can improve the description of the hadron spectrum. The advancements and challenges with functional methods in the extraction of resonance properties will be discussed in comparison with analogous efforts in lattice QCD. I will show results for the Roper resonance as the nucleon's first radial excitation, together with other resonances and their structure properties including electromagnetic transition form factors.

Summary

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