



Contribution ID: 151

Type: not specified

## Three-point functions in Yang-Mills Theory and QCD in Landau gauge

*Monday, 29 August 2016 18:30 (20 minutes)*

All the information about a quantum field theory is contained in the n-point functions. Once the n-point functions are computed they can be used in a next step to calculate hadron properties e.g. via the Bethe-Salpeter approach. On the level of three-point functions especially the three-gluon and quark-gluon vertices are of interest. The three-gluon vertex captures the property of self-interactions between gauge bosons in non-Abelian theories which is linked to confinement. On the other hand the quark-gluon vertex is crucial for the coupling of the Yang-Mills sector to the matter sector. In this work we will discuss solutions for the three-gluon and quark-gluon vertices from Dyson-Schwinger Equations (DSEs) and the three-particle irreducible (3PI) formalism.

### Summary

Based on arguments from Dyson-Schwinger Equations (DSEs) and the three-particle irreducible (3PI) formalism a truncated and closed set of equations for propagators and three-point functions is derived and solutions for the three-gluon vertex and the quark-gluon vertex are discussed.

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**Session Classification:** Section A

**Track Classification:** Section A: Vacuum Structure and Confinement