MP 8: Quantenfeldtheorie 1

Zeit: Donnerstag 9:00–10:00 　　　　　　　　　　　　　　　　　　　　　　　　　Raum: M010

MP 8.1　Do 9:00　M010

Flow equations for supersymmetric field theories — •Franziska Synatschke — Theoretisch-Physikalisches Institut, Universität Jena, Deutschland

A manifestly supersymmetric exact renormalization group flow will be presented for the N=1 Wess-Zumino-Model in two dimensions.

For that prupose, supersymmetric regulators are constructed in the off-shell formulation. The considered model allows for dynamical supersymmetry breaking. The phase diagramm will be discussed as well as the fixed-point structure of the ERG-flow.

MP 8.2　Do 9:20　M010

All tree-level amplitudes in N=4 SYM — •Johannes Henn[1] and James Drummond[2] — [1]HU Berlin, Deutschland — [2]LAPTH, Annecy, Frankreich

We give an explicit formula for all tree amplitudes in N=4 SYM, derived by solving the recently presented supersymmetric tree-level recursion relations. The result is given in a compact, manifestly supersymmetric form and we show how to extract from it all possible component amplitudes for an arbitrary number of external particles and any arrangement of external particles and helicities. We focus particularly on extracting gluon amplitudes which are valid for any gauge theory. The formula for all tree-level amplitudes is given in terms of nested sums of dual superconformal invariants and it therefore manifestly respects both conventional and dual superconformal symmetry.

MP 8.3　Do 9:40　M010

Über eine Beziehung zwischen chiraler Symmetriebrechung und Confinement — •Andreas Wipf[1], Franziska Synatschke[1], Christian Wozar[1] und Kurt Langfeld[2] — [1]Friedrich-Schiller-Universität Jena — [2]University of Plymouth

Kürzlich ist es Forschergruppen in Graz, Regensburg und Jena gelungen eine exakte Beziehung zwischen zentrums-gemittelten spektralen Summen des Diracoperators und dem statischen Quark-Antiquark Potential sowie dem chiralen Kondensat zu beweisen. Nach den wichtigsten analytischen Resultaten über den neuen Zusammenhang zwischen Erwartungswerten von Polyakov-Schleifen und dem Quark-Kondensat werden auch Ergebnisse von numerischen Simulationen besprochen.