



SFB-Seminar (Teilprojekt C5) und Vollversammlung

ZEIT:

11.7.2016, 13:30 Uhr - 17:00 Uhr

ORT:

IRIS-Haus 2.07, HU Berlin

PROGRAMM:

13:30 - 14:00 Kaffeepause

14:00 - 14:30 SFB-Vollversammlung

14:30 - 15:30 **Prof. Dr. Marcus Spradlin (Brown University)**

Cluster algebras and scattering amplitudes

Scattering amplitudes of planar $N=4$ supersymmetric gauge theory are functions with remarkable mathematical properties. The manifold of kinematic data for an n -particle scattering process is an example of a type of space known as a cluster Poisson variety, and it has been discovered that there is a deep connection between amplitudes and the associated $Gr(4,n)$ Grassmannian cluster algebra. I will review various aspects of this connection and show how exploiting these mathematical properties can greatly aid the computation of previously unknown amplitudes.

15:30 - 16:00 Kaffeepause

16:00 - 17:00 **Dr. Congkao Wen (Universita di Roma)**

Constraining effective actions via scattering amplitudes

I will discuss how the consistent conditions arising from scattering amplitudes can be utilized for constraining low-energy effective actions. In particular in this talk I will focus on the effective action of $N=4$ super Yang-Mills theory in the Coulomb branch. The constraints

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from supersymmetry as well as (broken) conformal symmetry allow us to obtain new non-renormalization theorems. I will also discuss scale invariance v.s. conformal symmetry in this context.

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