Institut Henri Poincaré

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String Theory in Greater Paris

Rencontres Théoriciennes

"Supergravité, théorie des cordes et théorie M"

Jeudi 17 Octobre 2019, 11:40

Amit Sever

CERN & Tel Aviv University

The Holographic Dual of Strongly γ-deformed N=4 SYM Theory

We present a first-principles derivation of a weak-strong duality between the four-dimensional fishnet theory in the planar limit and a discretized string-like model living in AdS5. At strong coupling, the dual description becomes classical and we demonstrate explicitly the classical integrability of the model. We test our results by reproducing the strong coupling limit of the 4-point correlator computed before non-perturbatively from the conformal partial wave expansion. Next, by applying the canonical quantization procedure with constraints, we show that the model describes a quantum integrable chain of particles propagating in AdS5. Finally, we reveal a discrete reparametrization symmetry of the model and reproduce the spectrum when known analytically. Due to the simplicity of our model, it could provide an ideal playground for holography. Furthermore, since the fishnet model and N=4 SYM theory are continuously linked our consideration could shed light on the derivation of AdS/CFT for the latter. This talk is based on recent work with Nikolay Gromov.

Institut Henri Poincaré, salle 314, 3ème étage

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