Geometry at Strong coupling for amplitudes/Wilson loops

Lionel Mason

Oxford

Mardi 21 Fevrier 2023 à 14:00

LPENS – Ferdinand Berthier (U207), Bâtiment Jaurès (29 Rue d'Ulm)

Résumé

The amplitude/Wilson loop correspondence identifies planar N=4 super-Yang-Mills amplitudes with certain null polygonal Wilson loops at all the values of the coupling. At strong coupling the Wilson loop was computed by Alday & Maldacena in terms of the area of a minimal surface in AdS5. To do so they developed a 'Y- system' for computing the amplitude. This talk re-interprets their construction as provding the underlying twistor space for a hyperKahler structure on the corresponding space of kinematic data. This geometry encodes the amplitude in terms of solutions to well known integrable differential equations. An as yet unfulfilled aspiration is to extend these ideas beyond strong coupling using formal similarities with other approaches.