

Yvonne Geyer – Loop integrands from the Ambitwistor String

Wednesday 29 September 2021 10:00 (1 hour)

In this talk, I will present an overview of the Ambitwistor String, a class of worldsheet models describing field theory, with particular focus on the progress in understanding loop amplitudes in Yang-Mills theory and gravity. While the worldsheet model naturally represents these amplitudes as correlators on higher genus Riemann surfaces, a residue theorem on the moduli space relates the complicated higher-genus expressions to much simpler formulae on (multi-)nodal spheres. The resulting formalism on the nodal sphere manifests many beautiful connections to other corners of the amplitudes community, such as the colour-kinematics duality. To conclude, I will discuss some recent work on three-loop results for supergravity, and a closely related proposal on how to uplift the field theory results obtained from the ambitwistor string to superstring loop amplitudes.