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Chord Diagrams in N=4 SYM field theory

In this talk, I introduce diagrams representing particle interactions in the quantum field theory N=4 SYM called Wilson loop diagrams. I give a condition for when two diagrams are geometrically equivalent. These diagrams give rise to chord diagrams, which help enumerate the number of other Wilson loop diagrams exist in each equivalence class. It is still an open question as to how many different equivalence classes exist.