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Using combinatorics to understand Dyson-Schwinger equations

Dyson-Schwinger equations are important integral equations in quantum field theory whose structure mirrors the recursive decomposition of Feynman diagrams into subdiagrams. I will discuss how we can try to understand Dyson-Schwinger equations combinatorially, first at the graph level as functional equations analogous to those coming from combinatorial specifications, and second, in nice cases, at the analytic level by unwinding into geometric series and chord diagrams.