

#### **C4 Structure of Quantum Field Theory: Hopf Algebras versus Integrability**

This project aims at understanding the structure of conformal  $N=4$  supersymmetric Yang-Mills theory by means of two complementary approaches. The first applies Hopf-algebraic methods to the perturbative expansion of this quantum field theory, while the second aims at analyzing and utilizing the integrable structures appearing in this model. The two principal investigators are, respectively, experts in these two fields, and aim at clarifying the connecting number-theoretic, algebraic and geometric aspects.