

# Integrable sigma models and RG flow

*Thursday 28 November 2019 14:15 (30 minutes)*

It is often conjectured that integrable 2d sigma models should be renormalizable (with only finitely many running couplings). After introducing integrability and sigma models, I will explain the intuition behind this conjecture. Although there is no general proof, it has been checked in various non-trivial examples at the leading 1-loop order. I will present recent work where we ask the question of what happens beyond 1-loop. In the examples of the lambda- and eta-deformed sigma models, we find that the conjecture is true beyond 1-loop if the sigma model target space geometries are supplemented with particular quantum corrections. Alternatively we may formulate the lambda-deformation as a sigma model on a “tripled” target space, where extra symmetries become manifest and the theory is renormalizable without corrections.

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