

Meeting: 1000, Albuquerque, New Mexico, SS 5A, Special Session on Categories and Operads in Topology, Geometry, Physics and Other Applications

1000-81-200 **K Ebrahimi-Fard**, Germany, **L Guo*** (liguo@newark.rutgers.edu), NJ, and **D Kreimer**, France. *Rota-Baxter algebras in renormalization of QFT.*

We review the work of Connes-Kreimer on renormalization in quantum field theory. We then focus on the Rota-Baxter algebra structure on the target space of the renormalization and show how a classic decomposition of Atkinson for Rota-Baxter algebras can be used to derive the Birkhoff decomposition in the Connes-Kreimer Birkhoff decomposition. (Received August 24, 2004)