

*Abstract submitted for 61st Annual Meeting of the Australian
Mathematical Society*

Title: ∞ -groupoids and the Homotopy Hypothesis

Author(s): Mr Edoardo Lanari

Session: Category Theory, Algebraic Topology, K-Theory

In this talk I will introduce a globular model for weak ∞ -groupoids, due to A. Grothendieck, and illustrate the basic features of their homotopy theory. It is conjectured that the $(\infty, 1)$ category they present models homotopy types (this is the so called ‘Homotopy Hypothesis’), which has been proven to hold true for essentially every other existing model of ∞ -groupoids (e.g., Kan complexes). I will also outline original ideas and results of my work, along with important results in the literature on this topic, to give an idea on how to prove this conjecture.