

**Talk on September 24, 2024, 15:00 pm**

Speaker: **Prof. Mauro Porta, University of Strasbourg**

Title: Homotopy theory of Stokes data and derived moduli

Abstract:

Stokes data are the combinatorial counterpart of irregular meromorphic connections in the Riemann-Hilbert correspondence. In dimension 1, they have been studied by Deligne and Malgrange. In higher dimensions the situation is intrinsically more complicated, but the solution of Sabbah's resolution conjecture by Mochizuki and Kedlaya unlocked a much deeper understanding of the Stokes phenomenon. In recent work with Jean-Baptiste Teyssier, we develop a framework to define and study Stokes data with coefficients in any presentable stable infinity category. As an application, we construct a derived moduli stack parametrizing Stokes data in arbitrary dimensions, extending all previously known representability results. One fundamental input is a finiteness theorem for the stratified homotopy types of algebraic and compact real analytic varieties that we obtained in collaboration with Peter Haine and that extends finiteness theorems for the underlying homotopy types of Lefschetz–Whitehead, Łojasiewicz and Hironaka.