

STOKES' THEOREM IN MIXED CHARACTERISTIC

Speaker: Zebao Zhang (张泽宝)

Chongqing University of Technology

Time: Monday, June 22th, 16:00-17:00

Venue: Room 102, SCMS

Abstract:

Stokes' theorem is a classical tool for constructing homotopies between morphisms of de Rham complexes. In the mixed-characteristic setting, local Frobenius liftings of a smooth \mathbb{S} -adic formal scheme induce quasi-isomorphisms between its de Rham and \mathbb{S} -de Rham complexes. We show that these local quasi-isomorphisms can be glued globally after a suitable two-sided truncation. By adapting fiber integration and Stokes' theorem from characteristic 0 , we construct higher homotopies between these local quasi-isomorphisms in mixed characteristic. As a consequence, we obtain a mixed-characteristic generalization of the Deligne–Illusie decomposition. This talk is based on my ongoing work.