Fall 2023 COLUMBIA UNIVERSITY IN THE CITY OF NEW YORK Samuel Eilenberg Lecture Series

Some New Geometric Structures in the Langlands Program

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Abstract: Starting from Harris-Taylor and my PHD work on the geometric realization of the local Langlands

correspondences to my recent joint work with Scholze, I will explain the new geometric structures that have emerged in the Langlands program. For the first time, ideas of the geometric Langlands program have been imported into the classical Langlands program in characteristic zero. To give life to those ideas we developed with Scholze some new geometry, following my work with Fontaine where we began to give a meaning to the idea of an holomorphic function of the variable p where p is a prime number. I will explain this new geometry and its applications to the Langlands program.



Starting Tuesday, September 12, 2023 Meeting on Tuesdays from 4:10pm - 5:25pm Mathematics Hall, room 520