Séminaire d'algèbre, topologie et géométrie
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Salle I

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Rigidity and Langlands correspondence for hypergeometric connections

The study of hypergeometric differential equations goes back to the pioneering work of Gauss and Riemann. In his book "Exponential Sums and Differential Equations" Katz defined a certain class of differential equations called "generalised Hypergeometric equations". He proved deep results about these objects, in particular, showing that they are "rigid". More recently, a particular class of such connections, called Kloosterman connections, were extensively studied by Frenkel-Gross, Heinloth-Ngo-Yun, and Zhu using Langlands correspondence. Lam and Templier then used this to establish mirror symmetry for minuscule flag varieties. The majority of this talk will be an overview of these developments. We then consider the case of non-minuscule flag varieties, where rigid connections also make an appearance and speculate about Langlands duality for such objects.