



Seminar/Talk

P-adic integration, geometry and Higgs bundles

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Integration with respect to the Haar measure over a non-archimedean local field F shares many formal properties with integration over the reals while at the same time being closely related to the arithmetic and geometry over the residue field of F . In the first part I will give an overview of the theory and explain two classical applications, namely rationality of Igusa's local zeta functions and Batyrev's proof of the equality of Hodge numbers for smooth projective birational Calabi-Yau varieties. In the second part I explain joint work with Michael Groechenig and Paul Ziegler, where we apply these ideas to the moduli space of G -Higgs bundles. In quite general situations we can relate p -adic volumes of Higgs spaces for Langlands-dual groups, from which we derive two results: the topological mirror symmetry conjecture of Hausel-Thaddeus, which relates Hodge numbers for SL_n and PGL_n Higgs spaces, and the geometric stabilization theorem for anisotropic Hitchin fibers of Ngô. If time permits I will also discuss recent ideas on how to effectively compute the p -adic volumes appearing in our argument.

Thursday, June 11, 2020 02:00pm - 04:00pm

<https://mathseminars.org/seminar/AGNTISTA>



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