Séminaire de théorie des nombres

Le 17 avril 2023 à 14h (PRG)

Hodge-properness and p-adic Hodge theory

Exposé de Dmitry Kubrak
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Résumé : I will talk about my joint works with Artem Prikhodko (mainly, https ://arxiv.org/abs/2105.05319 and https ://arxiv.org/abs/2211.17227) where we established some versions of p-adic Hodge theory in the setting of smooth Artin stacks. The scope of applicability of our results depends on the context : e.g. we show that one has integral p-adic Hodge theory for quotient stacks [X/G] with X smooth and proper and G reductive, but also that much more generally rational p-adic Hodge theory works for any Artin stack with smooth "Hodge-proper" integral model (where instead of usual properness we just ask the Hodge-cohomology to be finitely generated). The d-truncated version of the latter result (for d-Hodge-proper or, more generally, even d-de Rham proper stacks) also leads to a truncated version of p-adic Hodge theory, where the comparisons are established only up to a certain degree. This turns out to have non-trivial applications even in the schematic context : namely one can deduce cristallinity of etale cohomology groups in a certain range in the presence of a Cohen-Macauley integral model of a smooth proper scheme over p-adic field.