Séminaire de théorie des nombres

Le 16 juin 2025 à 14h (Jussieu)

Finiteness properties of generalized Montréal functors

Exposé de Gergely Zábrádi
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Résumé : There is a functor $\mathbb{V}^\vee \circ D_\Delta^\vee$ from the category of smooth p-power torsion representations of $\mathrm{GL}_n(\mathbb{Q}_p)$ to the category of inductive limits of continuous representations on finite p-primary abelian groups of the direct product $G_{\mathbb{Q}_p,\Delta} \times \mathbb{Q}_p^\times$ of $(n-1)$ copies of the absolute Galois group of $\mathbb{Q}_p$ and one copy of the multiplicative group $\mathbb{Q}_p^\times$. In the talk I explain why this functor attaches finite dimensional representations on the Galois side to smooth p-power torsion representations of finite length on the automorphic side. This has some implications on the finiteness properties of Breuil's functor, too. Moreover, $\mathbb{V}^\vee \circ D_\Delta^\vee$ produces irreducible representations of $G_{\mathbb{Q}_p,\Delta} \times \mathbb{Q}_p^\times$ when applied to irreducible objects on the automorphic side and detects isomorphisms unless it vanishes. Joint work with G. Jakovác.