

# Séminaire de théorie des nombres

Le 26 mai 2025 à 14h (PRG)

## Poincare duality for proetale local systems in $p$ -adic geometry

Exposé de Emanuel Reinecke  
(IHES)

**Résumé :** The cohomology groups of proetale  $\mathbf{Q}_p$ -local systems on rigid-analytic varieties over  $\mathbf{C}_p$  can be infinite-dimensional  $\mathbf{Q}_p$ -vector spaces even when the varieties are smooth and proper. Nevertheless, a recent result of Anschuetz-Le Bras-Mann shows that in the smooth and proper case they still have the structure of Banach-Colmez spaces and satisfy a version of Poincare duality. In my talk, I will discuss some background for this statement and then explain a different proof, which is essentially diagrammatic and follows a similar strategy as a previous argument in the case of  $\mathbf{F}_p$ -local systems. Joint work in progress with Shizhang Li, Wiesława Nizioł and Bogdan Zavyalov.