Seminar des SFB/TRR 326 GAUS

Freitag, 31.01.2025

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spricht über das Thema

Multivariable Lubin–Tate Fontaine equivalence

In 1991 J.-M. Fontaine proved an equivalence between continuons representations of $\mathcal{G}_{\mathbb{Q}_p}$ of finite type over $\mathbb{Z}_p$ and the category of étale (φ, Γ)-modules over the ring of functions on a ghost circle. Recent developments in the mod p Langlands program encouraged the search for similar equivalences for modules over multivariable rings. Work by Zábrádi and Carter–Kedlaya–Zábrádi fulfilled part of this expectation by establishing an equivalence between representations of finite products of $\mathcal{G}_{\mathbb{Q}_p}$ and multivariable cyclotomic (φ, Γ)-modules.

The first goal of this talk is to sketch a proof of a Lubin–Tate variant for a p-adic local field K. Namely, for a finite set Δ, we obtain an equivalence between continuous representations of $\prod_\Delta \mathcal{G}_K$ and a category called the étale $(\Phi_{\Delta,q} \times \Gamma_{\Delta,K,})$-modules over $\mathcal{O}_{\mathcal{E}_{K,\Delta}}$ with finite projective dévissage. On the way to characterise the essential image of the functor $\mathbb{D}_\Delta$, we will explain which properties of finite type representations over $\mathbb{Z}_p$ are preserved by a Fontaine type functor. This will allow to give a theorem similar to the structure of finite type $\mathbb{Z}_p$-modules for the underlying $\mathcal{O}_{\mathcal{E}_{K,\Delta}}$ appearing in the previous equivalence. Finally, we will motivate how Lubin–Tate multivariable (φ, Γ)-modules should be more useful than cyclotomic ones to obtain a Colmez functor for nK.

Ort: **INF 205, SR A**
Beginn: **13:30 Uhr**

Alle Interessenten sind herzlich eingeladen.

Prof. Dr. Otmar Venjakob