

Tame-blind extension of morphisms of truncated Barsotti-Tate group schemes

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Tate proved that any Galois-equivariant homomorphism between the Tate modules of Barsotti-Tate groups over a complete discrete valuation ring arises from a homomorphism between the original Barsotti-Tate groups. On the other hand, one may verify immediately that this result of Tate cannot be generalized to finite level without some further assumption, i.e., there is an easy example of a homomorphism between the generic fibers of truncated Barsotti-Tate group schemes which cannot extend to a homomorphism between the original truncated Barsotti-Tate group schemes.

In this talk, we discuss a sufficient condition for a homomorphism between the generic fibers of truncated Barsotti-Tate group schemes over a complete discrete valuation ring to extend to a homomorphism between the original group schemes. In particular, I plan to explain such a tame-blind condition, i.e., such a sufficient condition which depends only on the wild ramification index of the base ring.