

# Publication in Mathematics

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## Preprints

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**Mixed characteristic Geometric Casselman Shalika Formula**, arXiv:2408.07953, **submitted**. In this joint work with Ashwin Iyengar (American Mathematical Society) and Konrad Zou (Bonn University), we prove the geometric Casselma–Shalika formula in the setting of Witt vector Grassmanian.

**Integral aspects of Fourier Duality**, arXiv:2407.06184, **submitted**. In this joint work, we prove several results regarding integral versions of Fourier duality for abelian schemes, using Pappas’ work on integral Grothendieck–Riemann–Roch.

## In progress

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**Relative Langlands on the Fargues Fontaine, the Iwasawa Tate case**, joint with Yuta Takaya (Tokyo University). We explicitly compare the period and  $L$ -sheaves under the relative Langlands conjectures of Ben-Zvi-Sakellaridis-Venkatesh.

**Mixed characteristic Iwahori-Whittaker equivalence**, joint with Konrad Zou (Bonn University), this is an application of the previous paper on Casselman-Shalika Formula, where we also prove basic properties of categorical actions in the  $l$ -adic setting.

**Geometric categorical deformations, examples**, joint with Anish Chedalavada (Johns Hopkins University). We are attempting to work on Lurie’s 2010 ICM address on deformations of quantum groups.

**Stacky approach to motivic periods**, We give a ”stacky interpretation” of periods defined by F. Brown and P. Deligne.