

Mean values of multiplicative functions over the function fields

Oleksiy Klurman *

klurman@gmail.com

Understanding mean values and correlations of multiplicative functions over number fields plays key role in analytic number theory. Motivated by the recent work of Granville, Harper and Soundararajan we discuss mean values of multiplicative functions over the function fields $\mathbb{F}_q[x]$. In particular, we prove stronger function field analogs of several classical results due to Wirsing, Halasz, Hall, Tenenbaum explaining some surprising features that are not present in the number field setting. Our main result describes spectrum of multiplicative functions over the function fields.

This is based on joint works with C. Pohoata (Caltech) and K. Soundararajan (Stanford).

*Department of Mathematics, Royal Institute of Technology, KTH, Lindstedtsvägen 25, Stockholm 10044, SWEDEN