
WILLIAM VERREAU, University of Toronto

Moments of random multiplicative functions over function fields

Little is known about the distribution of the partial sums of random multiplicative functions defined over integers, but the order of magnitude of all moments has been recently determined by Harper. Building on recent work extending multiplicative and probabilistic number theory to the function field setting, we study the even natural moments of partial sums of Steinhaus and Rademacher random multiplicative functions defined over function fields. Using analytic arguments that parallel previous work over the integers as well as new combinatorial arguments special to the function field setting, we obtain an exact expression for the fourth moment and an asymptotic expression for the higher natural moments in the limit as $qN \rightarrow \infty$.