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On Hausdorff dimension in inhomogeneous Diophantine approximation over
global function fields

We study inhomogeneous Diophantine approximation by elements of a
global function field (over a finite field) in its completion for a discrete valuation. Given an (m,n) matrix A
with coefficients in this completion and a small r > 0, we obtain an effective upper bound for the Hausdorff
dimension of the set BadA(r) of r-badly approximable m-dimensional vectors, using an effective version of
entropy rigidity in homogeneous dynamics for an appropriate diagonal action on the space of integral grids.
We further characterize the matrices A for which BadA(r) has full Hausdorff dimension for some r > 0 by a
Diophantine condition of singularity on average. This is a joint work with Taehyeong Kim and Seonhee Lim.