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Upper bounds for dimensions of fixed vectors and coefficients in the Harish-Chandra—Howe expansion.

Let F be a p -adic field and let K_ℓ be the sequence of principal congruence subgroups of $GL_N(F)$. I will present work in progress on bounding the dimensions of spaces K_ℓ -fixed vectors in an irreducible representation π as ℓ grows. The asymptotic rate of growth has long been known to depend on the Gelfand-Kirillov dimension of π , equal to half the dimension of its wavefront set. I will explain how we uniformly bound the constants appearing in this asymptotic expansion, and how to deduce uniform upper bounds for the coefficients in the Harish-Chandra—Howe expansion of the character of π near the identity. This is joint work with Rahul Dalal and Simon Marshall.