1134-47-315 **Lauren C. Ruth*** (ruth@math.ucr.edu). *Two new settings for examples of von Neumann dimension.*

Let $G = PSL(2, \mathbb{R})$, let Γ be a lattice in G, and let $\mathcal{H}$ be an irreducible unitary representation of G with square-integrable matrix coefficients. A theorem in Goodman–de la Harpe–Jones (1989) states that the von Neumann dimension of $\mathcal{H}$ as a $W^*(\Gamma)$-module is equal to the formal dimension of the discrete series representation $\mathcal{H}$ times the covolume of Γ, calculated with respect to the same Haar measure. We will present two results inspired by this theorem. First, we show there is a representation of $W^*(\Gamma)$ on a subspace of cuspidal automorphic functions in $L^2(\Lambda\backslash G)$, where Λ is any other lattice in G, and $W^*(\Gamma)$ acts on the right; and this representation is unitarily equivalent to one of the representations in [GHJ]. Next, we explain how their proof carries over to a wider class of groups, and we calculate von Neumann dimensions when G is $PGL(2, F)$, for F a local non-archimedean field of characteristic 0; Γ is a torsion-free lattice in $PGL(2, F)$, which, by a theorem of Ihara, is a free group; and $\mathcal{H}$ is the Steinberg representation, or a depth-zero supercuspidal representation, each yielding a different dimension. (Received September 11, 2017)