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Eigenvalue Measures associated to Groups

To any matrix $A \in \mathrm{Mat}_n(\mathbb{C})$ we can associate a measure

$$\mu_A = \frac{1}{n} \sum_{i=1}^{n} \delta_{\lambda_i}$$

where λ_i are the eigenvalues of A and δ_{λ_i} denotes the dirac measure at $\lambda_i \in \mathbb{C}$. Let now G be a discrete, residually finite group and $\{N_i\}_{i\in\mathbb{N}}$ be a chain of normal subgroups of G with trivial intersection. Then for every matrix $A \in \mathrm{Mat}_n(\mathbb{C}[G])$ and every i we get a matrix $A_i \in \mathrm{Mat}_{n\cdot[G/N_i]}(\mathbb{C})$ that represents the action of A on $\mathbb{C}[G/N_i]^n \cong \mathbb{C}^{n\cdot[G/N_i]}$. Thus we get a series of measures μ_{A_i}.
In this talk we want to discuss the convergence properties of this series of measures