WOJCIECH JAWORSKI, Carleton University

Powers of averages of unitary representations

Given a unitary representation π of a locally compact group G and a probability measure μ on G, let P_μ denote the contraction $P_\mu = \int_G \pi(g)\,\mu(dg)$. If $X_1, X_2, X_3 \ldots$ is a sequence of i.i.d. G-valued random variables whose common distribution is μ, then the sequence $\pi(X_n X_{n-1} \ldots X_1)^{-1} P_\mu^n$ converges almost surely in the strong operator topology. This result and some of its consequences regarding a more explicit description of the asymptotic behaviour of the powers P_μ^n when n tends to ∞, will be discussed.