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*Rank One measures which are not asymptotically randomised by linear cellular automata*

Let $X = \{0,1\}^{\mathbb{N}} \to \{0,1\}^{\mathbb{N}}$. A *cellular automaton* is a continuous map $\Phi$ on $X$ which commutes with the shift map $\sigma$. In this talk $\Phi$ is the linear automaton $\Phi(x) = x + \sigma(x)$, with addition taken component-wise modulo 2. We construct a family of rank one measures $\mu$ which satisfy the property that the weak star limit of $\frac{1}{N}\sum_{t=1}^{N} \mu \circ \Phi^{-t}$ is not the uniform Bernoulli measure.