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Discrepancy in the behavior of Ergodic averages along subsequences
of integers in the Orlicz spaces $L\text{Log}^\beta L$ for $\beta > 0$

The classical theorem of Birkhoff states that the $T^N f(x) = \frac{1}{N} \sum_{k=0}^{N-1} f(\sigma^k x)$ converges almost everywhere for $x \in X$ and $f \in L^1(X)$, where σ is a measure

preserving transformation of a probability measure space X . It was shown that

there are operators of the form $T^N f(x) = \frac{1}{N} \sum_{k=0}^{N-1} f(\sigma^{n_k} x)$ for a subsequence

$\{n_k\}$ of the positive integers that converge in some L^p spaces while diverging in others. The topic of this talk will examine this phenomenon in the class of

Orlicz spaces $\{L\text{Log}^\beta L : \beta > 0\}$