**Topic:** Pointwise Ergodic Theorem along a Subsequence of the Integers.

**Abstract:** After Birkhoff’s Pointwise Ergodic Theorem was proved in 1931, there have been many attempts to generalize the theorem along a subsequence of the integers instead of taking the entire sequence \((n)\). In this talk, we will present the following result of Roger Jones and Máté Wierdl:

If a sequence \((a_n)\) satisfies $\frac{a_{n+1}}{a_n} \geq 1 + \frac{1}{(\log n)^{1+\epsilon}}$, for some $\epsilon > 0$,

then in any aperiodic dynamical system \((X, \Sigma, \mu, T)\), we can always find a function $f \in L^2$ such that the Cesàro averages along the sequence \((a_n)\) which is defined by

$$A_{n[N]} f(T^{a_n} x) := \frac{1}{N} \sum_{n \in [N]} f(T^{a_n} x) \quad (0.1)$$

fail to converge in a set of positive measure.