Northwestern | Mathematics

UNDERGRADUATE COLLOQUIUM

Alex Iosevich
University of Rochester

Fourier Series, Signal Recovery, and Real-Life Applications

Wed Feb 26th, 4:30-5:30p Lunt 105

We are going to discuss the following basic problem. Suppose that

$$f : \mathbb{Z}_N \to \mathbb{C}$$

is a signal, and suppose that the values

$$\{f(x) : x \in M\}$$

are missing for some

$$M \subset \mathbb{Z}_N$$

Under what reasonable conditions can we recover the missing values exactly? We are going to discuss the basic theory behind this problem, prove a couple of simple results, and then apply them to the recovery of the missing values in real-time series. The lecture will be almost entirely self-contained.