TEMPLE UNIVERSITY

Department of Mathematics

Analysis Seminar

Zoom meeting

Monday, February 1 2021, 2:30 p.m.

Two new local $T1$ theorems on non-homogeneous spaces

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Abstract: We introduce two new $T1$ theorems characterizing all Calderón-Zygmund operators

$$Tf(x) = \int f(t)K(t,x)d\mu(t)$$

that extend boundedly on $L^p(\mathbb{R}^n, \mu)$ for $1 < p < \infty$ with μ a non-doubling measure of power growth.

We employ a new proof method that, unlike all currently known works on $T1$ theorems in non-homogeneous spaces, does not use random grids. The new approach allows the use of a countable family of testing functions, and also testing functions supported on cubes of different dimensions.