TEMPLE UNIVERSITY
Department of Mathematics

Analysis Seminar

Zoom meeting
Monday, February 7 2022, 2:40 p.m.

The Schatten classes
of Calderón-Zygmund operators

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Abstract: We prove sufficient conditions for a Calderón-Zygmund operator to belong to the $p$-th Schatten-von Neumann classes $S_p(L^2(\mathbb{R}^d))$.

As in the classical $T1$ theory, the conditions are given in terms of the smoothness of the operator kernel, and the action of both the operator and its adjoint on the function $1$.

To prove membership to the Schatten class when $p > 2$ we develop new bump estimates for composed compact Calderón-Zygmund operators, and a new extension of Carleson’s Embedding Theorem.