

1145-42-2557

Joris Roos* (jroos@math.wisc.edu), **Shaoming Guo** and **Po-Lam Yung**. *Variation-norm estimates for certain singular oscillatory integrals.*

In this talk we discuss variation-norm estimates for certain oscillatory integrals related to Carleson's theorem. Corresponding maximal operators were first studied by Stein and Wainger. Our estimates are sharp in the range of exponents, up to endpoints. The proof relies on square function estimates for a family of Schrödinger-like equations due to Lee, Rogers and Seeger and local smoothing estimates for these equations. This is a joint work with Shaoming Guo and Po-Lam Yung. Our variational estimates can be combined with certain number-theoretic estimates and an argument in the spirit of Bourgain's multi-frequency maximal lemma to prove bounds for discrete analogues of the Stein-Wainger maximal operator (cf. recent work of Ben Krause). (Received September 25, 2018)