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Benjamin J Jaye* (bjaye@kent.edu). *Reflectionless measures for singular integral operators.*

In this talk we shall be concerned with necessary and sufficient conditions on a measure so that an associated singular integral operator is bounded. Our analysis hinges on a description of certain objects called reflectionless measures. We shall reduce certain well-known problems at the interface of harmonic analysis and geometric measure theory to a description of the reflectionless measures associated to singular integral operators. Furthermore, we show that this approach yields promising new results. The results described are joint work with Fedor Nazarov, Maria Carmen Reguera, and Xavier Tolsa. (Received January 12, 2016)