A NEW TWIST ON THE CARLESON OPERATOR

LILLIAN PIERCE

Abstract
Must the Fourier series of an $L^2$ function converge pointwise almost everywhere? In the 1960’s, Carleson answered this question in the affirmative, by studying a particular type of maximal singular integral operator, which has since become known as a Carleson operator. In the past 40 years, a number of important results have been proved for generalizations of the original Carleson operator. In this talk we will introduce the Carleson operator and survey several of its generalizations, and then describe new joint work with Po Lam Yung that introduces curved structure to the setting of Carleson operators.