

# DALHOUSIE MATHEMATICS COLLOQUIUM

Friday August 17, 2 pm, Chase 319

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## *Disjointness preserving maps and noncommutative structures*

Characterizing maps between various spaces has a long history dating back to the works of Cauchy, D’alembert and many others. Modern perspective on such problems starts with the work of S. Banach who gave a description of linear norm preserving operators on the  $L^p[0, 1]$  spaces for  $1 \leq p < \infty$ ,  $p \neq 2$ . This was subsequently generalized by Lamperti to include  $L^p$ -spaces with  $0 < p < \infty$ ,  $p \neq 2$  and later on, by Parrot and Strichartz, independently, to the convolution  $L^p$ -algebras.

The purpose of this talk is to discuss non-commutative analogs of such results. The crucial property of isometries that helped Lamperti (and Yeadon in the non-commutative setting) to describe isometries between  $L^p$ -spaces is being “disjointness preserving”.

I will introduce the concept of “disjointness preserving maps” and discuss some of its applications to the study of maps between  $L^p$ -spaces, Beurling convolution  $L^p$  algebras and noncommutative  $L^p$  spaces.