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*The Geometry of Higher Rank Numerical Ranges*

The higher rank numerical range is a recent discovery that was first introduced by Choi, Kribs and Zyczkowski in 2006. In this talk we will discuss the geometry of the higher rank numerical range of normal operators in detail. In general the higher rank numerical range of an operator is not a polygon, however when we consider normal operators the higher rank numerical range is a polygon in the complex plane  $\mathbb{C}$ . We will put several bounds on the number of sides of the polygons that are formed by normal operators. We will focus on unitary operators as well as the general case of normal operators.

This work was done in collaboration with Dr. J. Holbrook and Dr. R. Pereira of the University of Guelph.