Department of Mathematical Sciences
Faculty and Graduate Research Colloquium

Thursday, February 22, 2024
11:00 – 11:50 a.m.
RB 450

"On compactness of Toeplitz operators with continuous symbols on domains in multidimensional complex plane"
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Abstract:

Motivated by the Axler-Zheng Theorem, we study compactness of product of Toeplitz operators with symbols continuous on the closure of the domain in terms of behavior of the symbols on the boundary. Namely, we have the following results:

1. Consider a bounded pseudoconvex domain in multidimensional complex plane with Lipschitz boundary and f be a continuous function on the closure of the domain. We show that the Toeplitz operator with symbol f is compact on the Bergman space if and only if f vanishes on the boundary of the domain.

2. Consider the polydisc in multidimensional complex plane and let f,g be continuous functions on the closure of the polydisc. We show that for certain classes of symbols f and g, the product of Toeplitz operators is compact on the Bergman space if and only if fg vanishes on the boundary of the polydisc.

This is joint work with Trieu Le and Sonmez Sahutoglu.