

DEFENSE OF THE DOCTORAL DISSERTATION

DEPARTMENT OF MATHEMATICS

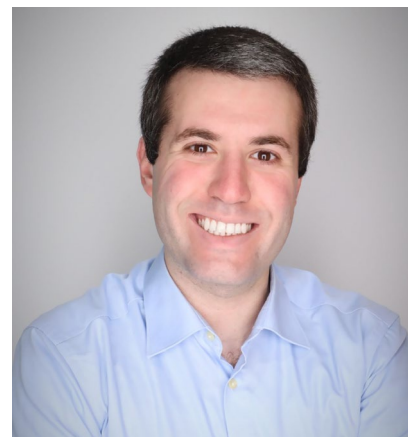
“Packing Integral Tori in Del Pezzo Surfaces”

Karim Boustany



Friday, April 5, 2024
Time: 3:00 PM
Location: 231 Hayes-Healy Bldg

Examination Committee:
Richard Hind, Advisor
Misha Gekhtman
Pavel Mnev
Ely Kerman - UIUC



Abstract:

We extend a packing result of R. Hind and E. Kerman for integral Lagrangian tori in $S^2 \times S^2$ to the Del Pezzo surfaces $(\mathbb{D}^n, \omega_{\mathbb{D}^n})$ for $n=1, \dots, 5$. An integral torus is one whose relative area homomorphism is integer-valued, and we seek a maximal integral packing. By definition, this is a disjoint collection $\{L_i\}$ of integral Lagrangian tori with the following property: any other integral Lagrangian torus not in this collection must intersect at least one of the L_i . We show that one can always find such a packing consisting of only the Clifford torus.