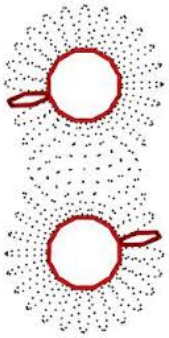
TEXAS STATE UNIVERSITY

The rising STAR *of Texas*



Texas State Topology Seminar

Thursday, 2018, October 18, 2:00-3:15 p.m., in DERR 227

Speaker: Sean Corrigan

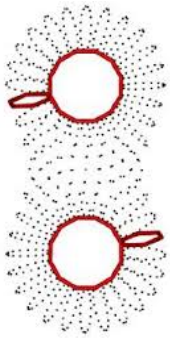
Topic: *Morse (in)equalities for low-dimensional orbifolds*

ABSTRACT

Using a notion of Morse functions on classifying spaces of finite groups, we can build Morse numbers which account for torsion in the integral equivariant homology associated to effective global quotient orbifolds. These numbers satisfy the same torsion-minded Morse inequalities for manifolds due to E. Pitcher in the 1950s. We would like to know which orbifolds allow for the achievement of equality — that is, when do the Morse numbers count exactly the minimal number of generators for the associated equivariant homology? For closed, orientable orbifolds of dimension two, we will provide a complete classification of those which admit such a minimal Morse function. For three-dimensional orbifolds, we will demonstrate some partial results followed by examples and counterexamples.

TEXAS STATE UNIVERSITY

The rising STAR *of Texas*



Texas State Topology Seminar

Thursday, 2018, October 18, 2:00-3:15 p.m., in DERR 227

Speaker: Sean Corrigan

Topic: *Morse (in)equalities for low-dimensional orbifolds*

ABSTRACT

Using a notion of Morse functions on classifying spaces of finite groups, we can build Morse numbers which account for torsion in the integral equivariant homology associated to effective global quotient orbifolds. These numbers satisfy the same torsion-minded Morse inequalities for manifolds due to E. Pitcher in the 1950s. We would like to know which orbifolds allow for the achievement of equality — that is, when do the Morse numbers count exactly the minimal number of generators for the associated equivariant homology? For closed, orientable orbifolds of dimension two, we will provide a complete classification of those which admit such a minimal Morse function. For three-dimensional orbifolds, we will demonstrate some partial results followed by examples and counterexamples.