COLLOQUIUM

Donald Stanley
University of Regina

Gluing Quasi-toric manifolds

Mathematics and Statistics

Friday, October 09, 2015; 3:30 - 4:30 PM; RIC 209

Abstract: The torus T^n is the product of n-copies of the circle S^1. If $n = 1$ is our friendly circle. If $n = 2$ it is simply the outside of a Tim Horton's donut. A convex polytope is a bounded interception of finitely many half spaces in $\mathbb{R}^n$. If $n = 1$ this is just a line segment and if $n = 2$ is it just a polygon. A quasi-toric manifold is a certain quotient of $P \times T^n$, where P is a convex polytope. The quotient is determined by the combinatorial data of the polytope P and characteristic vectors in $\mathbb{Z}^n$, one for each hyperplane that defines the polytope. We will describe how this combinatorial data determines the manifold and can also be used to compute many things about the manifold including its cohomology. Nearer to the end joint work with Soumen Sarkar about gluing such manifold together will be described.

University of Regina