# Topics about complex and real toric spaces

Song Zhang

This talk consists of 2 parts. The purpose of the first part is to show the cohomology ring of a moment-angle manifold over an $m$-gon in terms of an exterior algebra modulo an ideal, and count the Betti numbers of a special class of quotients of moment-angle manifolds. In the second part we study the cellular stuctures and fundamental groups of real toric spaces, and we give an explicit presentation of the fundamental group of the real toric space over a simple polytope. Then using this presentation, we give a description of the existence of $\mathbb{Z}/2$-valued colourings on a simple polytope from a special point of view.