**Meeting:** 1001, Evanston, Illinois, SS 9A, Special Session on Solving Polynomial Systems

1001-14-258 **Amit Khetan** and **Ivan Soprounov*** (isoprou@math.umass.edu). *Toric residues and partitions of polytopes.*

The toric residue map is associated with any collections of n+1 divisors on a complete n-dimensional toric variety. It has appeared in many contexts such as mirror symmetry, hypergeometric systems, and sparse polynomial systems. For example, Cattani and Dickenstein showed that the sum of the local Grothendieck residues over the solution set of a system of Laurent polynomial equations is an instance of the toric residue. We concentrate on the problem of computing the toric residue map explicitly. I will explain how this problem can be reduced to purely combinatorial questions about ordered partitions of vertices of the polytopes corresponding to the n+1 divisors. This allows us to solve the problem when the polytopes share a complete flag of faces (the previously known case is when the polytopes share the normal fan). This is a joint work with Amit Khetan. (Received August 28, 2004)