

1027-14-29

**Yunfeng Jiang\*** ([jiangyf@math.ubc.ca](mailto:jiangyf@math.ubc.ca)), Department of Mathematics, 1984 Math Road,  
Vancouver, BC V6T 1Z2, Canada. *The orbifold Chow ring of hypertoric Deligne-Mumford stacks.*

Hypertoric varieties are hyperkahler analogue of Kahler toric varieties. The topology of hypertoric varieties are determined by hyperplane arrangements. In this talk we introduce stacky hyperplane arrangements and define hypertoric Deligne-Mumford stacks, generalizing the construction of Hausel and Sturmfels on hypertoric varieties.

A stacky hyperplane arrangement  $\mathcal{A}$  is a triple  $(N, \beta, \theta)$ , where  $\beta : \mathbb{Z}^m \rightarrow N$  is given by  $m$  integral vectors  $\{b_1, \dots, b_m\}$  in  $N$ , and  $\theta$  is a generic element in the Gale dual  $DG(\beta)$  of  $\beta$  in the sense of Borisov, Chen and Smith. We prove that the orbifold Chow ring of the hypertoric Deligne-Mumford stack  $\mathcal{M}(\mathcal{A})$  is independent to the choice of generic element  $\theta$ , only depends on the map  $\beta$ .

Finally we compute two examples and draw the connection to crepant resolutions. This is a joint work with Hsian-Hua Tseng. (Received January 22, 2007)