1011-13-93 **Adam Van Tuyl*** (avantuyl@sleet.lakeheadu.ca), Department of Mathematics, Thunder Bay, Ontario P7B 5E1, Canada, and **Huy Tai Ha** (tai@math.tulane.edu), Department of Mathematics, 6823 St. Charles Ave., New Orleans, LA 70118. *On the resolutions of edge ideals.*

If $G$ is a simple graph (no loops or multiple edges) on $n$ vertices, then one can associate to $G$ a monomial ideal $I(G)$ in $k[x_1, \ldots, x_n]$ as follows: $I(G) = (\{x_i x_j \mid \{x_i, x_j\} \in E_G\})$. The ideal $I(G)$ is called the edge ideal of $G$. In this talk, I will discuss a method to study the minimal free resolutions of edge ideals based upon the notion of a splittable ideal (introduced by Eliahou and Kervaire). This approach allows us to recover most of the known results on resolutions of edge ideals with fuller generality, and at the same time, provides new results. Previous investigations on the resolutions of edge ideals usually reduced the problem to computing the dimensions of reduced homology or Koszul homology groups. Our approach has the advantage of circumventing the highly nontrivial problem of computing the dimensions of these groups and turns the problem into combinatorial questions about the associated simple graph. If time permits, I will show that our technique extends quite successfully to the study of graded Betti numbers of square-free monomial ideals viewed as facet ideals of simplicial complexes. (Received August 17, 2005)