Kuei-Nuan Lin* (ku120@psu.edu), Tai Ha, Susan Morey, Enrique Reyes and Rafael Villarreal. Edge ideals of oriented graphs.

We start with the definitions of the weighted oriented graph, \( D \), and the edge ideal, \( I(D) \), associated to the \( D \). We will then talk about why we are interested in this type of ideals. We provide several equivalent conditions for the Cohen-Macaulayness of \( I(D) \). As an application, we give a complete characterization for the Cohen-Macaulayness of \( I(D) \) when the underlying (undirected) graph of \( D \) is obtained from an arbitrary graph by adding a whisker at every vertex. (Received December 29, 2018)