On a Network Traffic Sensing Problem
Xingde Jia, Texas State University, jia@txstate.edu

In order to maintain a dynamic and efficient flow of information in a network, one needs to monitor the traffic situation of the network. Live traffic flow information can be obtained by deploying a set of sensors onto the network. The sensor locations in the network will affect greatly the efficiency and effectiveness of the sensing network. A major question is to determine the optimal sensor locations for a traffic network. We shall discuss the case where sensors are placed on the networks links, and also the case where the sensors are placed on the nodes in the network. A traffic network can be represented by a digraph, while the network links with sensors form an edge (or vertex) control set of the digraph. Several results have been proved on minimal edge (or vertex) control sets of digraphs. These results can be used to help the placement of sensor in a sensing network. I will also discuss some open problems at the end of the talk.