1145-00-1167 **Negar Orangi-Fard*** (negar@math.ksu.edu). *Connections between multicommodity maximum flow and modulus.* Preliminary report.

Maximum flow problems involve finding a feasible flow through a single-source, single-sink flow network that has maximum value. Multicommodity maximum flow problems are a generalization of this that involve finding an optimal flow between multiple sink and source pairs. In the case of a single source and sink, the dual optimization problem can be rewritten as a more general type of problem, called a p-modulus problem.

Utilizing this connection, we will show that the maximum multicommodity flow problem also has a p-modulus interpretation, which gives insight into its solution. Moreover, by modifying this modulus problem, we introduce a family of generalizations to the multicommodity maximum flow problem, including one that is closely related to electrical current flow. (Received September 24, 2018)