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**James B Collins\*** (jbcoll112@ncsu.edu), Raleigh, NC 27609. *The Domain Decomposition Method Applied to Hyperbolic Network Problems.*

Network problems are PDEs defined on the edges of a network. These include problems in traffic flow, gas pipelines, and the circulatory system. We consider hyperbolic problems defined on a network and apply the domain decomposition method. The goal of this talk is to determine under what conditions the domain decomposition method speeds up computation. These conditions depend partially on the final time  $T$  to which the problem is solved. Theoretical results are obtained for the linear acoustics equations on certain networks. Numerical results are shown for the linear acoustics and the nonlinear traffic flow equations on more general networks. (Received September 17, 2009)