1059-90-5 **Shafiu Jibrin*** (Shafiu.Jibrin@nau.edu), Northern Arizona University, Flagstaff, AZ 86001, **Richard J Caron**, University of Windsor, Windsor, Ontario N9B 3P4, Canada, and **Tim Traynor**, University of Windsor, Windsor, Ontario N9B 3P4, Canada. *Feasibility and Constraint Analysis of Sets of Linear Matrix Inequalities.*

In this talk we show how the framework for constraint analysis given by Caron and Traynor, which builds on the work by Boneh, can be applied to Linear Matrix Inequality (LMI) constraint sets. An implementation of the analysis requires a method to collect points, and to determine which constraints are satisfied at each point, in the ambient space. Much of this paper will be devoted to the development of such a methodology based on hit and run sampling. Test results show that our approach not only provides information required for constraint analysis, but will also, if the feasible region is non-void, with probability one, find a feasible point. (Received August 21, 2009)