Meeting: 1003, Atlanta, Georgia, SS 9A, AMS-MAA-SIAM Special Session on Research in Mathematics by Undergraduates, I

1003-05-169 **Jeremy Smith*** (jsmith@utk.edu). *Domination Parameters of RNA Trees.* Preliminary report.

Of the forty-seven possible tree structures on nine vertices, only four are known to represent an RNA structure. It is yet to be determined if any of the remaining structures exist in nature as an RNA structure. In this paper, we determine various domination parameters to further the study of these trees. Using the domination parameters: domination, total domination, and perfect domination and correlating these values with known RNA structures on seven and eight vertices, we determine that there are eight trees with nine vertices that are potential candidates to exist in nature as an RNA structure. (Received August 17, 2004)