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**Shafiu Jibrin\***, Department of Mathematics & Statistics, Northern Arizona University, PO Box 5717, Flagstaff, AZ 86011-5717. *Comparing search directions in infeasible Newton's Method for Weighted Analytic Center for Linear Matrix Inequalities.*

We study different search directions for Infeasible Newton's method in computing the weighted analytic center for linear matrix inequalities. The search directions methods considered are the ZY, ZY+YZ,  $Z^{-1}$  and NT methods that have been used in the more general problem of semidefinite programming. Our numerical results indicate that the ZY method converges more rapidly and it handles weights better compared to the other methods when some of the weights are very large relative to the other weights. This is followed by ZY+YZ, then NT and then  $Z^{-1}$  methods. This contrasts with what is known in semidefinite programming, where ZY+YZ is found to be more efficient than the other methods. (Received January 24, 2016)