1151-05-198 **Walter Morris*** (wmorris@gmu.edu), Department of Mathematical Sciences MSN 3F2, George Mason University, 4400 University Drive, Fairfax, VA 22030. *On the Holt-Klee condition for oriented matroid programming.*

The Holt-Klee theorem states that an orientation of a d-polytopal graph induced by an admissible linear functional admits d independent monotone paths from the source to the sink. Digraphs coming from oriented matroid programs generalize d-polytopal digraphs. Fukuda et. al. proved that every digraph of a rank 4 oriented matroid program on 8 elements admits 3 independent paths from the source to the sink. We show that every oriented matroid program of rank r=4 or r=5 and arbitrarily many elements admits r-1 independent paths from the source to the sink. (Received August 18, 2019)