1106-05-496 **Leslie Hogben*** (hogben@aimath.org). *Rectilinear crossing numbers of complete tripartite graphs.*

The *crossing number* of a graph G is the minimum number of crossings in a nondegenerate planar drawing of G. There has been extensive study of crossing numbers of complete bipartite graphs and complete graphs since Turán posed the question for the complete bipartite graph. Much less is known for complete tripartite graphs. A nondegenerate planar drawing of G is *rectilinear* if every edge is drawn as a straight line segment, and the *rectilinear crossing number* $\overline{\mathrm{cr}}(G)$ of G is the minimum number of crossings in a rectilinear drawing of G; clearly the rectilinear crossing number of G is an upper bound for the crossing number of G. Zarankiewicz proved that $\overline{\mathrm{cr}}(K_{m_1,m_2}) \leq Z(m_1,m_2) := \left\lfloor \frac{m_1}{2} \right\rfloor \left\lfloor \frac{m_1-1}{2} \right\rfloor \left\lfloor \frac{m_2}{2} \right\rfloor \left\lfloor \frac{m_2-1}{2} \right\rfloor$ and attempted to prove $\overline{\mathrm{cr}}(K_{m_1,m_2}) = Z(m_1,m_2)$; the latter equality has become known as Zarankiewicz's Conjecture. We define an analogous bound for the complete tripartite graph and prove it is an upper bound for rectilinear crossing number of the complete tripartite graph. (Received August 30, 2014)