

1104-05-206

Craig Timmons* (craig.timmons@csus.edu). *On the chromatic number of the Erdős-Rényi orthogonal polarity graph.*

The Erdős-Rényi orthogonal polarity graph, denoted ER_q , is a well-known object in extremal graph theory. Results of Mubayi and Williford together with Hoffman's bound show that the order of magnitude of the independence number of ER_q is $q^{3/2}$. This implies a lower bound of order $q^{1/2}$ on the chromatic number of ER_q . Establishing a matching upper bound is an open problem. In this talk we present upper bounds on the chromatic number of ER_q , some of which are best possible up to a constant factor. This is joint work with Mike Tait and Xing Peng. (Received September 01, 2014)