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Arran Christopher Hamm* (hamma@winthrop.edu), 204 Longsight Ln Apt 108, Rock Hill, SC 29730. *A Generalization of Two-Graphs*. Preliminary report.

A two-graph is a 3-uniform hypergraph, \mathcal{G} , satisfying that every set of four vertices contains an even number of edges of \mathcal{G} . Two-graphs were introduced in the 1950's by D. G. Higman to study certain doubly transitive groups, but were found to have connections to configurations of equiangular lines and switching classes of graphs among other things. One can generalize the definition of two-graph rather naturally; define an even k -graph to be a k -uniform hypergraph, \mathcal{H} , satisfying that every set of $k + 1$ vertices contains an even number of edges of \mathcal{H} . This talk will provide background on the theory of two-graphs as well as analogous results for even k -graphs. (Received July 18, 2016)