1106-60-1567 **John C Wierman*** (wierman@jhu.edu), Dept. of Applied Mathematics & Statistics, 100 Whitehead Hall, Johns Hopkins University, Baltimore, MD 21286. *On Percolation Threshold Curves for 3-Uniform Hypergraphs.* Preliminary report.

Since the origins of percolation theory in the 1950s, a major challenge has been to determine the percolation threshold exactly for a large class of lattices. Research by Ziff and Scullard identified a class of lattices formed by replacing each hyperedge of a 3-uniform self-dual periodic hypergraph by a "generator" graph, for which the solution of a simple equation provides the exact percolation threshold. The result may be re-interpreted in terms of a "threshold curve," which provides the solution for any generator in a 3-uniform self-dual periodic hypergraph. The approach may be extended to other 3-uniform periodic hypergraphs, for which an exact threshold curve has not been found, although bounds for it may be determined. (Received September 14, 2014)