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Ping Ngai Chung* (briancpn@mit.edu), 305 Memorial Drive, Cambridge, MA 02139. *On the c -strong Chromatic Number of t -intersecting Hypergraphs.* Preliminary report.

For a fixed $c \geq 2$, a c -strong coloring of the hypergraph G is a vertex coloring such that each edge e of G covers vertices with at least $\min\{c, |e|\}$ distinct colors. A hypergraph is t -intersecting if the intersection of any two of its edges contains at least t vertices. This paper addresses the question: what is the minimum number of colors which suffices to c -strong color *any* t -intersecting hypergraph? We first show that the number of colors required to c -strong color a graph of size n is $O(\sqrt{n})$. Then we prove that we can use finitely many colors to 3-strong color any 2-intersecting hypergraphs. Finally, we show that $2c - 1$ colors are enough to c -strong color any *shifted* $(c - 1)$ -intersecting hypergraphs, and $2c - 2$ colors are enough to c -strong color any *shifted* t -intersecting hypergraphs for $t \geq c$, both chromatic numbers are optimal and match the conjectures by Blais, Weinstein and Yoshida, who conjectured that the shifted condition can be removed. (Received September 03, 2012)