

Response on the review on “Coloring cross-intersecting families”

First, I thank the anonymous referee for the fast and motivating review. I tried to do my best, making the paper more correct and reader-friendly.

Definitions

- The definitions of hypergraph, n -uniform hypergraph, vertex coloring and the notation $\chi(H)$ were added.
- The definition of cross-intersecting family was clarified.
- The definitions of intersecting and cross-intersecting families now appears earlier in the text.
- K_4 is replaced on “a complete graph on 4 vertices”.

Summing up, I hope, that now every notion and notation is well-defined.

Typos

- Formula (1) was corrected.
- Now the references on the lemmas are correct.

Other upgrades

- References on the papers by P. Erdős, C. Ko and R. Rado, Hilton and Milner, and Frankl are written in more details.
- An explanation of the inequality $M(n) \leq r(n)$ was added.
- The proof of Theorem 1.5 was slightly rewritten.
- Fedor Petrov explained me that the following statement is not true.

Unfortunately, there is no “random” example of such family, so the set of known intersecting families with chromatic number 3 is very poor.

Remark 1.14 covers this gap.