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(4,3)-families of convex sets on a plane

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A finite family $\mathcal{F}$ of convex sets is called satisfying (p, q)-property or just a (p, q)-family if among any p members of this family there are q of them having a point in common. It is known that if $p \leq q \leq d + 1$ then there is a constant $HD_d(p, q)$ such that for any (p, q)-family $\mathcal{F}$ of convex sets in $\mathbb{R}^d$ there is a set of $HD_d(p, q)$ points that intersects every member of $\mathcal{F}$. The goal of our work is finding new upper bound on $HD_2(4, 3)$. During the presentation it will be told about current progress on initial problem and our results related to properties of $(4, 3)$-families of convex sets on a plane.

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