CONVEX FAIR PARTITIONS INTO ARBITRARY NUMBER OF PIECES

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In [4] a very natural problem was posed: Given a positive integer m and a convex body K in the plane, cut K into m convex pieces of equal areas and perimeters.

The case $m = 2$ of the problem is done with a simple continuity argument. The case $m = 2^k$ could be done similarly using the Borsuk–Ulam–type lemma by Gromov [5]. Further cases, $m = p^k$ for a prime p, were established in [3] and [2] independently.

In the talk I will outline the proof for arbitrary m which was recently obtained in [1]. We will see how equivariant obstruction method was used to solve the special cases of the problem, why it failed in the general case, and what new ideas were required to move further.

References

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