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SOME REMARKS ON CATEGORY PROJECTIONS OF PLANAR SETS

The authors of [1] provide that the measure projection of the subset $A \times B$ of \mathbb{R}^2 is non-empty and open whenever A and B are measurable sets with positive finite Lebesgue measure /the assumption that A and B have finite measure may be omitted/.

In Proposition 1 the same conclusion is proved for second category A having the property of Baire and second category B . This fact is an improvement of Theorem 2.6 of [1] /see also [2]; Th. 2/.

In [5] Sierpiński constructed a second category set $S \subset \mathbb{R}^2$ which meet every line at most in 2 points.

In Proposition 2 we improve the construction of S and give an example of a linear set A of second category for which category projections of $A \times A$ are empty. This fact is a stronger version of the Theorem of [3].