

Edward Grzegorek

Remarks on σ -fields without continuous measure

In: Zdeněk Frolík (ed.): Abstracta. 5th Winter School on Abstract Analysis. Czechoslovak Academy of Sciences, Praha, 1977. pp. 27.

Persistent URL: <http://dml.cz/dmlcz/701082>

Terms of use:

© Institute of Mathematics of the Academy of Sciences of the Czech Republic, 1977

Institute of Mathematics of the Academy of Sciences of the Czech Republic provides access to digitized documents strictly for personal use. Each copy of any part of this document must contain these *Terms of use*.



This paper has been digitized, optimized for electronic delivery and stamped with digital signature within the project *DML-CZ: The Czech Digital Mathematics Library* <http://project.dml.cz>

FIFTH WINTER SCHOOL

Remarks on σ -fields without continuous measure

by

E. Grzegorek

Let \mathcal{A} be a countably generated σ -field on the real line. If the family of all atoms of \mathcal{A} is uncountable, then we will consider the following property of \mathcal{A} :

(0) if μ is a σ -measure on \mathcal{A} such that $\mu(X) < \infty$ and $\mu(A) = 0$ for every atom A of \mathcal{A} , then $\mu(X) = 0$.

It is easy to see that the question in [1] (P21) is equivalent to the following question:

(1) do there exist countably generated σ -fields \mathcal{A}_1 and \mathcal{A}_2 on the real line which do not have the property (0) but the σ -field generated by $\mathcal{A}_1 \cup \mathcal{A}_2$ has the property (0) ?

We prove that assuming $2^{\aleph_0} = \aleph_1$ or only Strong Baire Category Theorem the answer to this question is positive.

A note on this subject will appear in Colloquium Mathematicum in 1978.

References

- [1] S. Banach, Sur les suites d'ensembles excluant l'existence d'une mesure, Note posthume avec préface et commentaire de E. Marczewski, Colloquium Mathematicum 1(1948), p. 103-108.