

PROPERTY OF RAPID DECAY FOR EXTENSIONS OF COMPACTLY GENERATED GROUPS

ŁUKASZ GARNCAREK

Abstract: In the article we settle down the problem of permanence of property RD under group extensions. We show that if $1 \rightarrow N \rightarrow G \rightarrow Q \rightarrow 1$ is a short exact sequence of compactly generated groups such that Q has property RD, and N has property RD with respect to the restriction of a word-length on G , then G has property RD.

We also generalize the result of Ji and Schweitzer stating that locally compact groups with property RD are unimodular. Namely, we show that any automorphism of a locally compact group with property RD which distorts distances subexponentially, preserves the Haar measure.

2010 Mathematics Subject Classification: 22D15, 43A15, 20F65.

Key words: Property RD, group extension.