PROPERTY OF RAPID DECAY FOR EXTENSIONS OF COMPACTLY GENERATED GROUPS

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Abstract: In the article we settle down the problem of permanence of property RD under group extensions. We show that if $1 \to N \to G \to Q \to 1$ 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.

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