PROPERTY OF DEFECT DIMINISHING AND STABILITY

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ABSTRACT. Let Γ be a group and $\mathscr{C}$ a class of groups endowed with bi-invariant metrics. We say that Γ is $\mathscr{C}$-stable if every ε-homomorphism $\Gamma \to G$, $(G, d) \in \mathscr{C}$, is δ_ε-close to a homomorphism, $\delta_\varepsilon \to 0$ when $\varepsilon \to 0$. If $\delta_\varepsilon < C\varepsilon$ for some C we say that Γ is $\mathscr{C}$-stable with a linear rate. We say that Γ has the property of defect diminishing if any asymptotic homomorphism can be changed a little to make errors essentially better, see Definition 3.4. We show that the defect diminishing is equivalent to the stability with a linear rate.

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