# SOME STRUCTURAL PROPERTIES OF IDEAL INVARIANT INJECTIONS

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ABSTRACT. Given an ideal $\mathcal{I}$ on $\omega$ and an injection $f : \omega \to \omega$ we say that $f$ is $\mathcal{I}$-invariant if $f[A] \in \mathcal{I}$ for any $A \in \mathcal{I}$, and we say that $f$ is bi-$\mathcal{I}$-invariant if $f[A], f^{-1}[A] \in \mathcal{I}$ for any $A \in \mathcal{I}$. We study some properties of classes of $\mathcal{I}$-invariant and bi-$\mathcal{I}$-invariant injections with respect to several classes of ideals, namely countable generated ideals, maximal ideals, ideals generated by Solecki's submeasures and classical density zero and summable ideals. We try to determine when injections are somehow invariant with respect to these ideals and try to determine Borel complexity of classes of such injections in Polish space of all injections $f : \omega \to \omega$. The results were obtained together with M. Balcerzak and Sz. Głąb.