SETS WITH A SELF-MODULUS BOUNDING NO Δ^0_α SET

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ABSTRACT. Say that $f \in \omega^\omega$ is a modulos of $\mathbf{X}$ if $(\forall g \in \omega^\omega)\,[(\forall n)\,(g(n) > f(n)) \implies g \geq_T \mathbf{X}]$ and that f is a self-modulus if f is a modulus of the degree of f. A well known result of Solovay's shows that a degree has a modulus iff it is Δ^1_1. Considerably less is known about sets with a self modulus. Groszek and Slaman construced a degree with a self-modulus that bounds no non-recursive Δ^0_2-set. I review their proof and extend the result to Δ^0_α where $\alpha < \omega_{ck}$.