Some Results on Stationary Subsets of Regular Cardinals

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We will discuss of some new results on stationary subsets of regular cardinals. A result establishes a condition in terms of cub-games when a stationary subsets can be destroyed without adding subsets of small cardinality.

As a model theoretic application of the results we have the following theorem:

Theorem 1 *Let T be a countable complete unsuperstable theory and κ a cardinal. Suppose that one of the following hold:*

1. *The cardinal κ is singular or $\kappa = \omega$ or there is a stationary set $S \subseteq S^{\kappa^+}_{\omega}$ with $\square\kappa S$.*
2. *The cardinal κ is regular, $\kappa^{\omega} = \kappa$ and the ideal $I[\kappa^+]$ is improper.*

Then there are models $\mathfrak{A}, \mathfrak{B} \models T$ of cardinality κ^+ such that $\mathfrak{A} \ncong \mathfrak{B}$ and a partial order P that does not add subsets of cardinality at most κ such that in every P-generic extension $\mathfrak{A} \cong \mathfrak{B}$.

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