

# The Galvin property at successors of singulars

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- Some consistently new instances of  $\lambda \rightarrow (\lambda, \omega + 1)$ , relation to strong generating sequence of ultrafilters, and more...

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A family of subsets of  $\kappa$ ,  $\langle A_i \mid i < \lambda \rangle$  with the property that for every  $I, J \in [\lambda]^{<\kappa}$ ,  $I \cap J = \emptyset \Rightarrow (\bigcap_{i \in I} A_i) \cap (\bigcap_{j \in J} A_j^c) \neq \emptyset$  is called a  $\kappa$ -independent family of size  $\lambda$ ,

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There are some limiting results due to Garti (see [6])

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Assuming larger cardinals, we were able to get this failure to hold globally, for every successor of singular cardinal.

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*Let  $U$  be a normal ultrafilter over  $\kappa$ . Let  $\langle c_n \mid n < \omega \rangle$  be  $V$ -generic Prikry sequence for  $U$ , and suppose that  $A \in V[\langle c_n \mid n < \omega \rangle]$  diagonalize  $(Cub_\kappa)^V$ . Then, there exists  $\xi < \kappa$  such that  $A \setminus \xi \subseteq \{c_n \mid n < \omega\}$ . In particular,  $|A \setminus \xi| \leq \aleph_0$ .*

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*Let  $U$  be a normal ultrafilter over  $\kappa$ . Let  $\langle c_n \mid n < \omega \rangle$  be  $V$ -generic Prikry sequence for  $U$ , and suppose that  $A \in V[\langle c_n \mid n < \omega \rangle]$  diagonalize  $(Cub_\kappa)^V$ . Then, there exists  $\xi < \kappa$  such that  $A \setminus \xi \subseteq \{c_n \mid n < \omega\}$ . In particular,  $|A \setminus \xi| \leq \aleph_0$ .*

On the other hand, just forcing a Prikry sequence is not enough:

# Two opposite results for Prikry forcing

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On the other hand, just forcing a Prikry sequence is not enough:






## Theorem 11




*Let  $\mathcal{C}$  be a witness for the strong negation. Then there exists  $\mathcal{D}$ , such that:*

- 1  $\mathcal{D}$  is also a witness for the strong negation;
- 2 For every normal ultrafilter  $U$  over  $\kappa$ , forcing with  $Prikry(U)$  yields a generic extension where  $\mathcal{D}$  cease to be a witness.

Thank you for your attention!

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