

**NEW CONSISTENCY RESULTS ABOUT CARDINAL
INVARIANTS ASSOCIATED WITH THE STRONG MEASURE
ZERO IDEAL**

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Yorioka [3] constructed a *matrix* of subsets of the reals, which gives a Tukey isomorphism between the σ -ideal of strong measure zero sets \mathcal{SN} and $\langle \kappa^\kappa, \leq^* \rangle$, to prove that $\text{cof}(\mathcal{SN}) = \mathfrak{d}_\kappa$ (the *dominating number on κ^κ*) whenever $\text{add}(\mathcal{I}_f) = \text{cof}(\mathcal{I}_f) = \kappa$ for all increasing f (the \mathcal{I}_f are the *Yorioka ideals*).

In this talk we introduce a *suitable matrix* (see [1]) that generalizes Yorioka's matrix in some sense, and we construct a *suitable matrix* via a forcing matrix iterations of ccc posets to force

$$\text{add}(\mathcal{SN}) = \text{cov}(\mathcal{SN}) < \text{non}(\mathcal{SN}) < \text{cof}(\mathcal{SN}).$$

On the other hand, the speaker with Mejía and Rivera-Madrid [2] showed that, in Sacks model, $\text{non}(\mathcal{SN}) < \text{cov}(\mathcal{SN}) < \text{cof}(\mathcal{SN})$. These are first results where 3 cardinal invariants associated with \mathcal{SN} are pairwise different

REFERENCES

- [1] Cardona, Miguel A., *On strong measure zero ideal*, in preparation.
- [2] Cardona, Miguel A. and Mejía, Diego A. and Ismael Rivera-Madrid, *The covering number of the strong measure zero ideal can be above almost everything else*, arXiv:1902.01508.
- [3] T. Yorioka, *The cofinality of the strong measure zero ideal*, J. Symb.Logic 67 (2002) 1373-1384.

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