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**Title:** Local Ramsey Theorem. An abstract approach.

**Abstract:** Given a topological Ramsey space  $(\mathcal{R}, \leq, r)$  (see [6]), we extend the notion of semiselective coideal to sets  $\mathcal{H} \subseteq \mathcal{R}$  and study conditions for  $\mathcal{H}$  that will enable us to make the structure  $(\mathcal{R}, \mathcal{H}, \leq, r)$  a Ramsey space (not necessarily topological) and also study forcing notions related to  $\mathcal{H}$  which will satisfy abstract versions of interesting properties of the corresponding forcing notions in the realm of Ellentuck's space [2, 4]. As applications, we prove that under suitable large cardinal hypotheses every semiselective ultrafilter  $\mathcal{U} \subseteq \mathcal{R}$  is generic over  $L(\mathbb{R})$  and that given a semiselective coideal  $\mathcal{H} \subseteq \mathcal{R}$ , every definable subset of  $\mathcal{R}$  is  $\mathcal{H}$ -Ramsey. This generalizes some results from [5] and the corresponding results for the case when  $\mathcal{R}$  is equal to Ellentuck's space (see [3, 1]).

## References

- [1] Di Prisco C., Mijares J., Uzcátegui C., *Ideal games and Ramsey sets*, Proc. Amer. Math. Soc. 140 (2012), 2255-2265.
- [2] Ellentuck E., *A new proof that analytic sets are Ramsey*. J. Symbol. Logic 39, 163–165 (1974).
- [3] Farah, I. *Semiselective coideals*, Mathematika., **45**(1998), 79–103.
- [4] Mathias, A. R., *Happy families*, Ann. Math. Logic, **12**(1977), n1, 59–111.
- [5] Mijares, J. G., *A notion of selective ultrafilter corresponding to topological Ramsey spaces*, Math. Log. Quart. 53(3), 255–267 (2007).
- [6] Todorcevic S., *Introduction to Ramsey spaces*. Princeton University Press, Princeton, New Jersey, 2010.