

- DILIP RAGHAVAN, *Higher cardinal invariants*.

National University of Singapore.

E-mail: `dilip.raghavan@protonmail.com`.

There has been a recent resurgence of research into cardinal invariants at regular uncountable cardinals. This recent work has revealed many differences between cardinal invariants at ω and their analogues at uncountable cardinals. One unexpected conclusion is that there seem to be more ZFC inequalities provable at uncountable cardinals than at ω . The study of cardinal invariants at uncountable cardinals has also led to the development of novel forcing techniques, mostly notably the method of forcing with Boolean ultrapowers, which was introduced in [4] to investigate the higher analogue of the almost disjointness number.

I will present a survey of some of this recent work, restricting my attention to six combinatorial cardinal characteristics at regular uncountable cardinals. Some ZFC results, such as the ones in [1] and [2], as well as some consistency results, such as the ones in [3], will be mentioned. Time permitting, I will expose the method of Boolean ultrapowers as developed in [4] and sketch some of the consistency results at regular uncountable cardinals that can be obtained using this method.

[1] RAGHAVAN, D. AND SHELAH, S., *Two inequalities between cardinal invariants*, *Fundamenta Mathematicae*, vol. 237 (2017), no. 2, pp. 187–200.

[2] RAGHAVAN, D. AND SHELAH, S., *Two results on cardinal invariants at uncountable cardinals*, *Proceedings of the 14th and 15th Asian Logic Conferences* (Mumbai, India and Daejeon, South Korea), (B. Kim, J. Brendle, G. Lee, F. Liu, R. Ramanujan, S. M. Srivastava, A. Tsuboi, and L. Yu, editors), World Scientific Publishing Co. Pte. Ltd., Hackensack, NJ, 2019, pp. 129–138.

[3] RAGHAVAN, D. AND SHELAH, S., *A small ultrafilter number at smaller cardinals*, *Archive for Mathematical Logic*, to appear.

[4] RAGHAVAN, D. AND SHELAH, S., *Boolean Ultrapowers and Iterated Forcing*, preprint.