

STATEMENT OF RESEARCH

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My area of research is the Combinatorics of Singular Cardinals with an emphasis on Cardinal Arithmetic. I am interested in connections between the PCF conjecture and more standard combinatorics. During this workshop I would like to solve, or acquire the tools necessary to solve, the following two questions which are related to the PCF conjecture ([3]):

1) Prove that in L there are continuous tree-like scales in the product of inaccessible cardinals.

This has already been done for the product of successor cardinals ([2]) in the 80's. This problem might involve notions from the construction of morasses in $L[U]$.

2) Translate a part of 1) into extender ultrapowers as in [1] and give a direct proof that " 0^\sharp exists" follows from the unary version of Shelah's Approachable Free Subset Property ([3]).

The purpose of this is to build the framework to then go to higher large cardinals, hopefully up to a sharp for a strong cardinal.

REFERENCES

- [1] J. Cummings, M. Foreman, E. Schimmerling, *Organic and Tight*, Annals of Pure and Applied Logic 160 (2009), 22-32
- [2] H. D. Donder, R. B. Jensen, and L. J. Stanley, *Condensation-coherent global square systems*, In A. Nerode and R.A. Shore, editors, *Recursion Theory*, volume 42 of Proc. of Symp. in Pure Math, pages 237-258, Providence 1985, AMS
- [3] L. Pereira, *The PCF conjecture and large cardinals*, J. Symbolic Logic 73 (2008), 674-688