Distributivity spectra and fresh functions

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Abstract

In my talk, I will introduce a notion of distributivity spectrum of forcings, namely the fresh function spectrum, which is the set of regular cardinals λ, such that the forcing adds a new function with domain λ all whose initial segments are in the ground model.

I will give general facts how to compute the fresh function spectrum, and will discuss what sets of regular cardinals are realizable as a fresh function spectrum of a forcing: under GCH, a wide class is realizable by Easton products of Cohen forcings; on the other hand, it is consistent that there is no forcing such that ω_1 is the only element of its fresh function spectrum. Moreover, I will provide several examples, including well-known tree forcings on ω such as Sacks, Miller, and Mathias forcing, as well as Prikry and Namba forcing to illustrate the difference between fresh functions and fresh subsets.

This is joint work with Vera Fischer and Marlene Koelbing.