
ALF DOLICH, University of Illinois at Chicago, Chicago IL 60607
Independence relations, universality, and SOP_4

In [2] (elaborated upon by Dzamonja and Shelah in [1]), Shelah studies, for a fixed theory T , whether under an appropriate forcing it is consistent that at certain cardinals λ only few models of T of cardinality λ are needed to elementarily embed all models of T of cardinality λ . In [3] Shelah showed that for any simple theory T as well as for various non-simple examples this is the case and that this universality property fails for any theory with the combinatorial property SOP_4 . I will discuss work towards developing a uniform framework, based on the existence of independence relations with several weak properties, intended to capture all theories T with the desirable universality property alluded to above.

References

- [1] Mirna Dzamonja and Saharon Shelah, *On properties of theories which preclude the existence of universal models*. Ann. Pure Appl. Logic **139**(2006), 280–302.
- [2] Saharon Shelah, *The universality spectrum: consistency for more classes*. In: Combinatorics, Bolyai Society Mathematical Studies, 1993, 403–420.
- [3] ———, *Toward classifying unstable theories*. Ann. Pure Appl. Logic **80**(1996), 229–255.