

# Building models from categoricity in small cardinals

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One of the first things one loses when stepping out of the first-order setting is the compactness theorem, which in particular assures us that if there is an infinite model then there is a model in each cardinality. In this series of talks we will show, in ZFC, that a universal  $L_{\omega_1, \omega}$  sentence that is categorical in successive small cardinals has a model in each cardinality and moreover is categorical above a threshold. This result was obtained by Vasey in [Vas]. If time permits we will present stronger results, using weak diamonds, obtained by Vasey and the speaker in [MaVa] and compare them with the results of [Vas].

## Referencias

[MaVa] Marcos Mazari-Armida and Sebastien Vasey, *Universal classes near  $\aleph_1$* , Accepted, The Journal of Symbolic Logic.

[Vas] Sebastien Vasey, *On categoricity in successive cardinals*. In preparation.