Einladung zum Oberseminar Mathematische Logik

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On Untranscendable Linear Order Types

Since its inception, set theory was concerned with the generalisation of the arithmetic operations on the natural numbers to the transfinite. There are two different such generalisations, though, the ordinal and cardinal one. Unlike in the case of the latter, the literature on the former is somewhat sparse. Also, very roughly, more is known about ordinals than general linear order types, more is known about the behaviour of addition than that of multiplication, and more is known about equality than embeddability. To illustrate this, we are introducing multiplicative analogues of indecomposability for linear order types that we call untranscendability and s-untranscendability, respectively. With the unique exception of the two-point type, every untranscendable type is indecomposable, and every σ-scattered untranscendable type is strongly indecomposable. Moreover, according to the Proper Forcing Axiom, every untranscendable Aronszajn type is strongly indecomposable. Finally, a theorem of Hagendorf and Jullien to the effect that every strictly indecomposable type must be strictly indecomposable to either the left or right turns out to have a natural multiplicative analogue for s-untranscendable types. I am going to describe all our results in context and sketch possibilities for future research.

This is joint work with Garrett Ervin and Alberto Marcone

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Zu diesem Vortrag laden wir Sie herzlich ein.

gez. Anton Freund