Funny business in branching space-times: Infinite modal correlations

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Abstract

The theory of branching space-times is designed as a rigorous framework for modelling indeterminism in a relativistically sound way. In that framework there is room for ``funny business'', i.e., modal correlations such as occur through quantum-mechanical entanglement.
This paper extends previous work by Belnap on notions of ``funny business''. We provide two generalized definitions of ``funny business''. Combinatorial funny business can be characterized as ``absence of prima facie consistent scenarios'', while explanatory funny business characterizes situations in which no localized explanation of inconsistency can be given. These two definitions of funny business are proved to be equivalent, and we provide an example that shows them to be strictly more general than the previously available definitions of ``funny business''.

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