

Entropy and majorisation in generalised probabilistic theories

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If one thinks of a state of a system as a data table a natural generalisation of quantum theory appears, known as the framework for generalised probabilistic theories. Generalisations of the von Neumann entropy as well as majorisation (another way of quantifying randomness) then become possible. Investigating these is a concrete way of asking to what extent information theory and statistical mechanics are independent of the underlying theory, and what types of new phenomena could appear if quantum theory is modified.