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Spacetime in Everett's interpretation of quantum mechanics

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Sixty years ago, Hugh Everett III suggested that when a quantum observable is measured by an apparatus, all possible results of the measurement exist. Many different ways to understand this statement have later been proposed, which roughly fall under the headings of many worlds, many minds and decohering sectors of the wave function. Understanding multiplicity is, in my view, a pressing problem in making sense of Everett's approach. Related to this is the problem of the nature of space, or spacetime. It turns out that interpreters of Everett view spacetime in different ways. Some believe, for instance, that all worlds exist in a single spacetime, others that spacetime itself splits, others still that the spacetime of quantum mechanics and quantum field theory is not the same as the macroscopic spacetime. I intend to analyse some consequences of such views, and will argue that much remains to be done for this approach to be defined adequately.

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