

Branching space-time, postprint January, 2003

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Abstract

"Branching space-time" is a simple blend of relativity and indeterminism. Postulates and definitions rigorously describe the "causal order" relation between possible point events. The key postulate is a version of "everything has a causal origin"; key defined terms include "history" and "choice point." Some elementary but helpful facts are proved. Application is made to the status of causal contemporaries of indeterministic events, to how "splitting" of histories happens, to indeterminism without choice, and to Einstein-Podolsky-Rosen distant correlations.

Keywords: indeterminism, causation, relativity, EPR,

branching space-times

General Issues: Causation

Subjects: General Issues: Determinism/Indeterminism

Specific Sciences: Physics: Relativity Theory

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