

On Reichenbach's Causal Betweenness

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Abstract We characterize, by easily verifiable properties, abstract ternary relations isomorphic to the causal betweenness introduced by Hans Reichenbach.

1 Introduction

A *finite probability space* is an ordered pair (S, p) where S is a finite set and $p : S \rightarrow [0, 1]$ is a function such that

$$\sum_{s \in S} p(s) = 1.$$

The set S is called a *sample space* and its subsets are called *events*; when A and B are events, AB denotes $A \cap B$. The *probability* $P(A)$ of event A is defined by

$$P(A) = \sum_{s \in A} p(s);$$

when A and B are events with $P(B) > 0$, the *conditional probability* $P(A|B)$ of A given B is defined by

$$P(A|B) = \frac{P(AB)}{P(B)}.$$

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