

Theory of Causality

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Definition of Causality:

phenomenon of type A occurs at time t_1 ,

phenomenon of type B occurs at time t_2

$$t_1 < t_2$$

if we know that every time a phenomenon of type A occurs,
that in T seconds a phenomenon of type B will occur, with 100% certainty,
then we say that A will cause B in T seconds

Measurable Causality:

class of events α ,

class of events β

if we can say that every time a phenomenon $A \in \alpha$ occurs,
that between time $T - \epsilon$ and time $T + \epsilon$ a phenomenon $B \in \beta$ will occur,
then we can say we measured the cause of B, and call that cause α