

Time, Euclidean Geometry and Relativity

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Abstract

Relativity, Special and General represent Time as a linear dimension in a 4-dimensional spacetime. However, one of the important ways in which time can be distinguished from space is through the examination of the distinguishing properties of clocks and rulers. Clocks are irreversible dynamical systems subject to constraint by the laws of nature. Rulers are reversible systems which do not directly depend upon the laws of motion, but only on the principles of isometry.

Axiom systems for homogeneous time, linear time, cyclic time and "cyclic-linear" time are proposed and given a thorough examination.

Keywords: Time Space Measurement Laws of Nature Clocks Rulers Geometry Relativity

Subjects: [General Issues: Models and Idealization](#)

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