Tense Logic in Einstein-Minkowski Space-time

Harrington, James (2007) Tense Logic in Einstein-Minkowski Space-time.

Full text available as:
PDF - Requires a viewer, such as Adobe Acrobat Reader or other PDF viewer.

Abstract

This paper argues that the Einstein-Minkowski space-time of special relativity provides an adequate model for classical tense logic, including rigorous definitions of tensed becoming and of the logical priority of proper time. In addition, the extension of classical tense logic with an operator for predicate-term negation provides us with a framework for interpreting and defending the significance of future contingency in special relativity. The framework for future contingents developed here involves the dual falsehood of non-logical contraries, only one of which becomes true. This has several methodological, metaphysical and physical advantages over the alternative traditional frameworks for handling future contingents.

Keywords:	spacetime, tense logic, indeterminacy, future contingents, relativity
Subjects:	Specific Sciences: Physics: Relativity Theory General Issues: Determinism/Indeterminism
ID Code:	3449
Deposited By:	HARRINGTON, JAMES
Deposited On:	23 July 2007