Model Checking Phase Event Automata

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Overview

- Computer Aided Verification.
- Checking concurrent systems modeled as PEAs.
- PEAs are an extension of TAs.
- **MCPEA**: events, data, and time.
Phase Event Automaton

A PEA consists of the following components:

- A set of *locations* (phases). Each location has:
  - A state invariant.
  - A clock invariant.

- A set of *variables*:
  - Typed state variables (e.g. bool, int, real, etc.).
  - Boolean event variables.
  - Real-typed clock variables.

- A set of *edges*. Each edge has:
  - source and target locations.
  - A guard.
  - A set of clocks to be reset.

- A set of *initial edges*. 
Example

\[ \ell_0 \quad \parallel \quad \ell_1 \parallel \ell_2 \]

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Implementation

- Programming language: C++.
- Blind search only.
- TODO:
  - Normalization of real-valued variables.
Contact

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