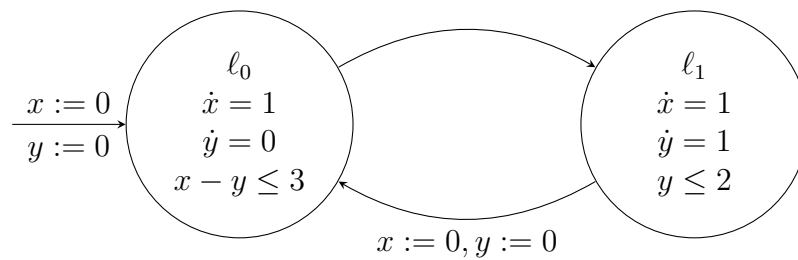




Tutorial for Cyber-Physical Systems - Hybrid Models Exercise Sheet 9

Exercise 1: Forward reachability analysis of LHA

Consider the following linear hybrid automaton \mathcal{H} :



For a given linear hybrid automaton and $i \in \mathbb{N}$ we define $R_i \subseteq \Sigma$ inductively as follows:

$$R_i = \begin{cases} \text{Init} & i = 0 \\ \langle \text{post}[R_{i-1}] \rangle^\nearrow & i > 0 \end{cases}$$

- What does R_i describe?
- Compute R_2 for \mathcal{H} .
- What can you say about R_3 ? What are the consequences?