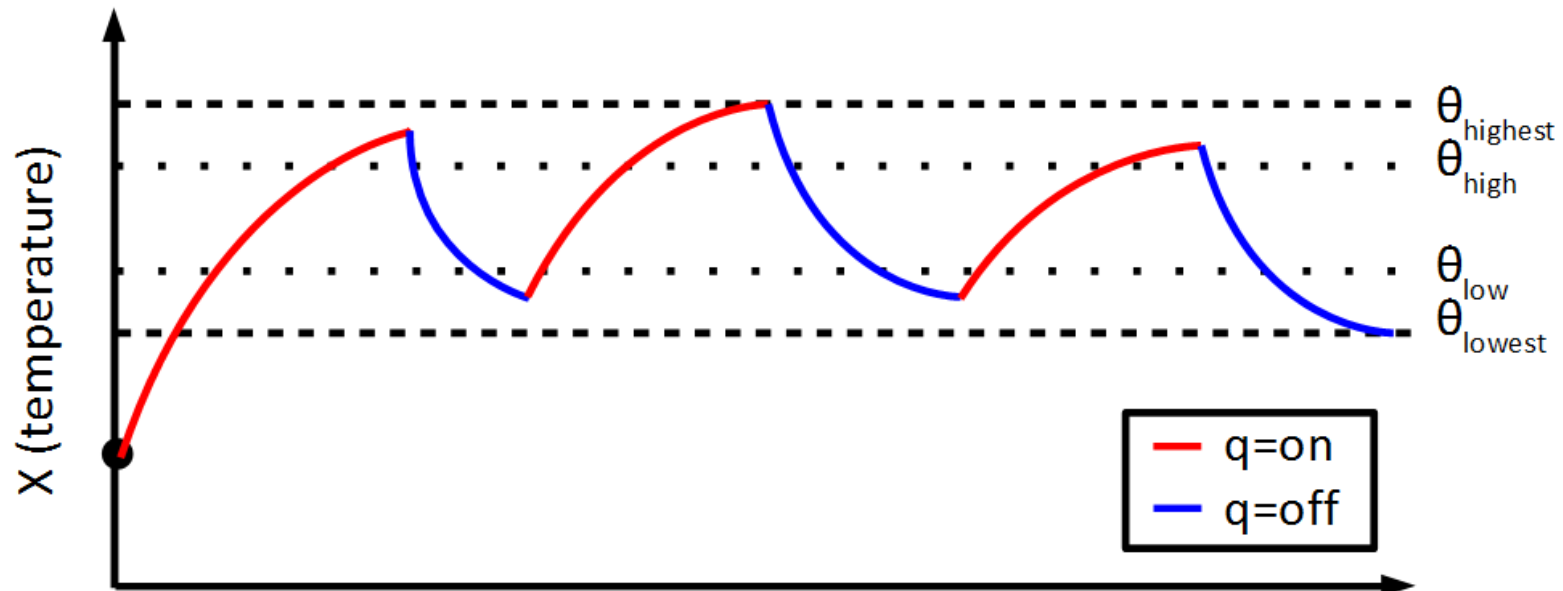
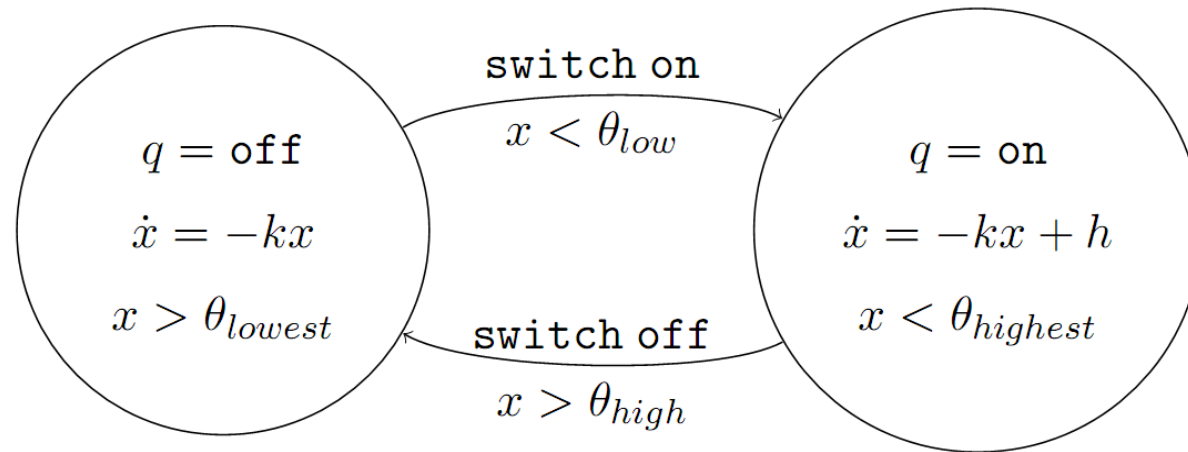


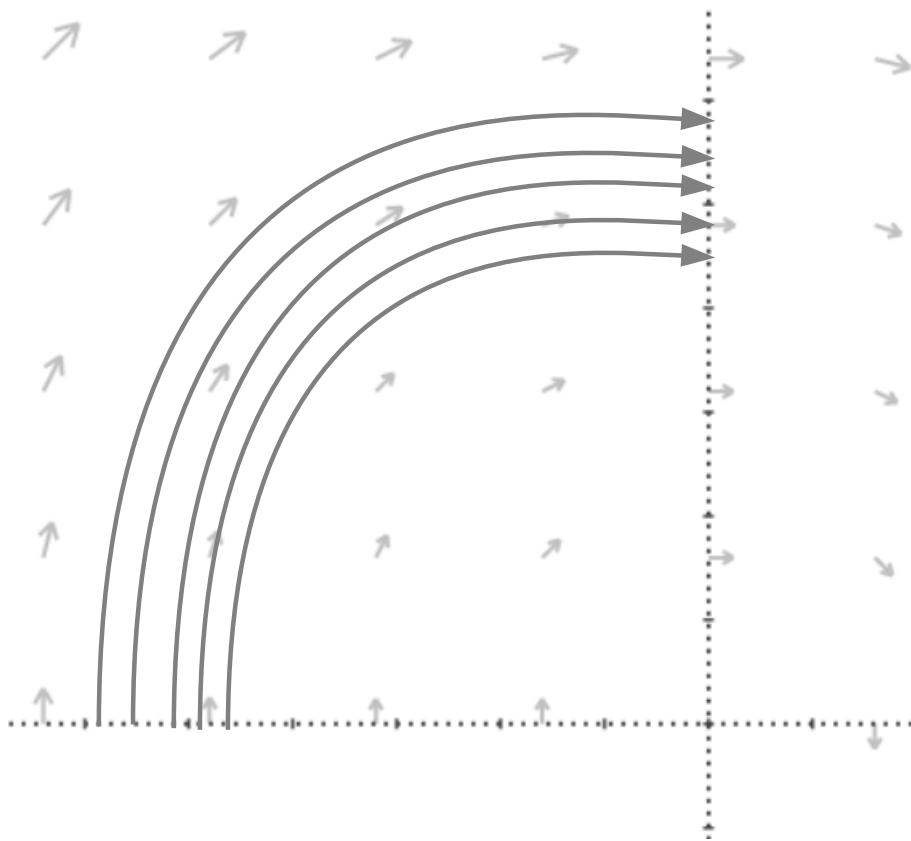
HyLAA 2.0: A Verification Tool for Linear Hybrid Automaton Models of Cyber-Physical Systems

Stanley Bak
Parasara Sridhar Duggirala

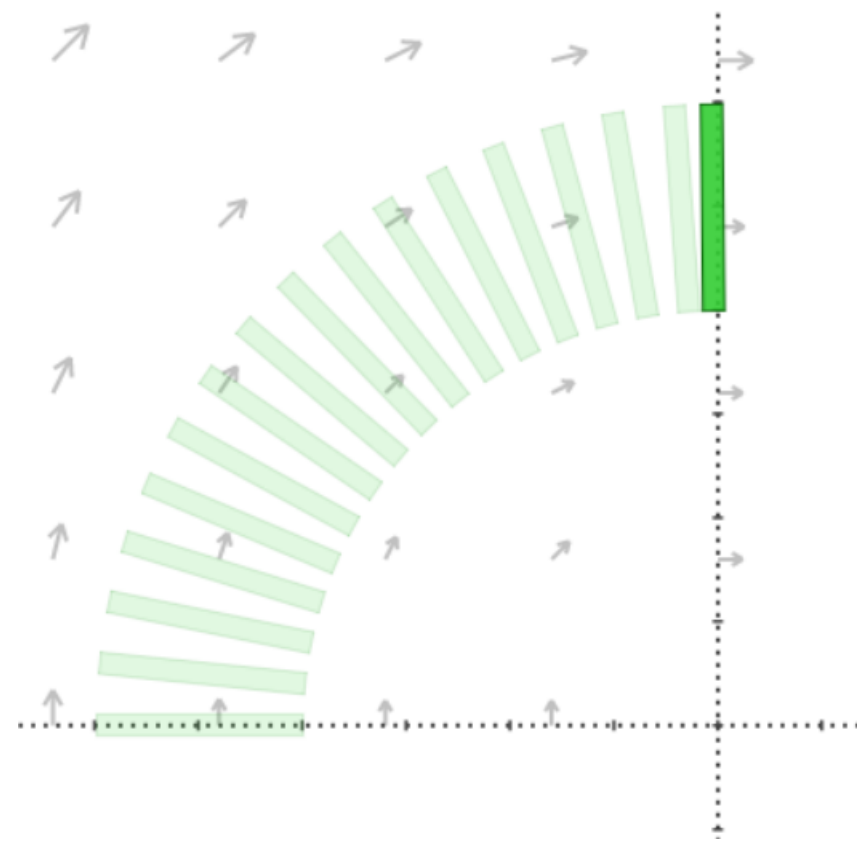
Hybrid Automaton Formalism



Set-based Verification



Sample and simulate



Flowpipe construction



Hylaa 2.0

- Verification of systems with both inputs and multiple discrete modes
- Counter-example generation upon finding errors
- Overapproximation refinement
- Visualization (image and video export, multiple concurrent plots)

Example: Structural Model of ISS Component 1R (Russian Service Module)

- 271 state variables
 - 2^{271} possible corner start states
- 3 time-varying inputs
 - $2^3 = 8$ choices at every time step

