Sound Invariant Generation for Continuous and Hybrid Systems

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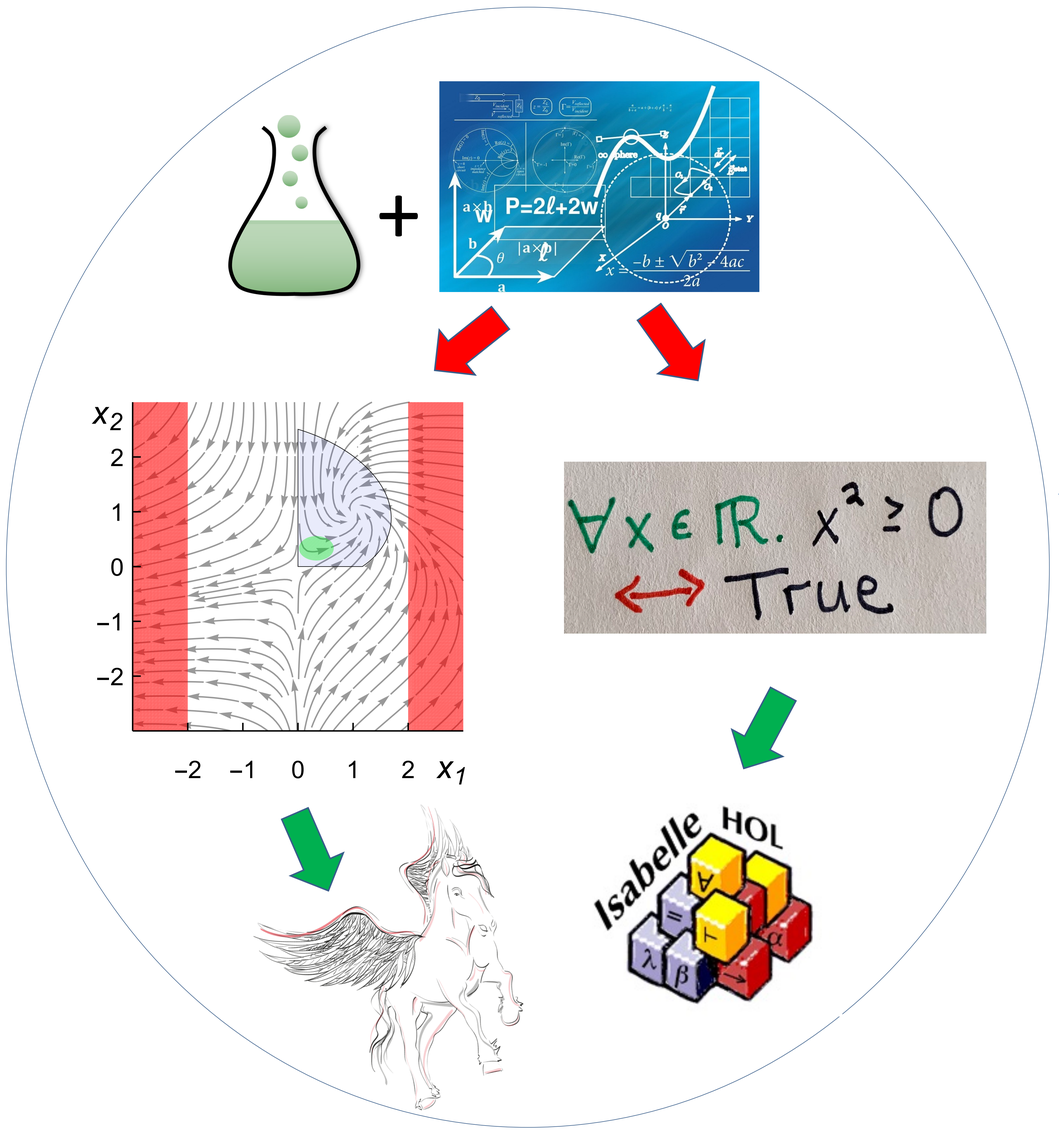
Challenge:

- Two key bottlenecks for sound CPS verification: *invariant generation* and *quantifier elimination*



Solution:

- Improve/extend Pegasus, a tool to automatically generate invariants
- Verifying the Ben-Or, Kozen, and Reif quantifier elimination algorithm …

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Scientific Impact:

- Improving bottlenecks will enable the sound verification of previously intractable CPS models

Broader Impact:

- **Societal:** More practical CPS verification means more trustworthy CPS.
- **Education**: Support for invariant generation helps students verify complicated models.