Ways of Parallelizing SAT/SMT/MC

• Application Level Parallelism
  – multiple Problems (Model+Spec), e.g. SAGE
  – *embarrassingly Parallelism*

• Portfolio / Engine Level Parallelism
  – different Strategies / configurations / algorithms
  – schedule / synergy / sharing

• Algorithmic Parallelism
  – systems: Cloud / Cluster / Multi-Core / GPU
  – e.g. *guiding path, cube & conquer* (in SMT/SAT)
Parallelizing SAT/SMT/MC on the Cloud

- Application and Portfolio Level easily possible.
- Control Flow Splitting
  - splitting search space is hard
    - needs to avoid repeating hard sub-problems.
    - how to share learned information?
  - current symbolic algorithms
    - in general memory bound
    - complex control flow
- Data Flow Oriented Symbolic Algorithms?
- Cloud Model Checking as a Service?
- Security and Business Model issues?