

# Decision Heuristic

- SAT instances may have (tens, hundreds of ?) thousands of variables
- Most SAT instances have **clusters of variables**: sets of variables that are semantically linked

**GOAL:** to force the SAT solver to work on one cluster at a time

- Each variable has an associated **activity**
- Each time it appears in a conflict analysis, its activity is incremented
- **Recent** activity should be given **more importance**:
  - ◆ Divide all activities by integer  $K$  from time to time, or
  - ◆ Keep increasing the activity increment
- **Decide** chooses unassigned var with **highest activity**
- Note that heuristic does not depend on clauses: **CHEAP!**
- Value selection: take *false*, or last tried value for that variable (**last phase**)