

### 1.2.1 The Model-Checking Process

In applying model checking to a design the following different phases can be distinguished:

- *Modeling* phase:
  - model the system under consideration using the model description language of the model checker at hand;
  - as a first sanity check and quick assessment of the model perform some simulations;
  - formalize the property to be checked using the property specification language.
- *Running* phase: run the model checker to check the validity of the property in the system model.
- *Analysis* phase:
  - property satisfied? → check next property (if any);
  - property violated? →
    1. analyze generated counterexample by simulation;
    2. refine the model, design, or property;
    3. repeat the entire procedure.
  - out of memory? → try to reduce the model and try again.