

COMPUTATIONAL DIFFICULTIES

1. EXPLORATION: BIG LATTICE OF MODELS

# variables	3	4	5	6
# general structures	5	20	180	16,143
# specific structures	9	114	6,894	7,785,062
(with 1 output)	5	19	167	7,580
(with 1 output, no loops)	4	8	16	32

LATTICE OF *STATE*-BASED MODELS **MUCH** BIGGER !!

NEED INTELLIGENT HEURISTICS!

2. COMPOSITION: STATE SPACE IS LARGE (often \gg data)

Simple models (no loops, one predicting component), e.g.,
AB:AZ, *closed-form solution*:

Comp. time/storage \propto Data

NO PROBLEM

Complex models (loops, many predicting components), e.g.,
AB:AZ:BZ, *need iterative algorithm*:

30 binary variables $\Rightarrow 2^{30} \approx 10^9$ cells, even if data is sparse.

Comp. time/storage (*naively*) \propto State space **PROBLEM**