### Evaluation: All Merge Strategies

<table>
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<th>Merge and Shrink</th>
<th>Coverage</th>
<th>Constr (sec)</th>
<th>Exp (50th)</th>
<th>Exp (75th)</th>
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<tr>
<td>NoMystery-2011 #9</td>
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<td>730</td>
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</tbody>
</table>

### Evaluation: Random Merge Strategies

- Sample of 1000 random merge strategies on each planning task:
  - Expected coverage: 680.17
  - 72 tasks in 19 domains solved by some baseline, but no random strategy
  - 21 tasks in 9 domains solved by some random, but no baseline strategy

### Evaluation: DFP

- Score-based merge strategy: prefer transition systems with common labels synchronizing close to abstract goal states
- Problem: many merge candidates with equal scores
- Use tie-breaking: prefer atomic or composite transition systems
- Further tie-breaking based on variable order (R, L, or RND)

### Evaluation: MIASM

- Precomputed merge strategy: partition state variables based on searching for variable subsets that “maximize pruning”
- Simple score-based variant of MIASM: compute all merges, choose the one with highest amount of pruning

### Evaluation: New Strategy (SCC-DFP)

- Based on the causal graph (CG)
- Compute clusters of variables corresponding to SCCs of the CG
- Use DFP for merging within and between SCCs
- “Plan ahead”: mixture of precomputed and score-based strategies

### Conclusions

- Random strategies show potential for devising better strategies
- DFP strongly susceptible to tie-breaking
- Simple MIASM variant performs close to original MIASM
- New state-of-the-art non-linear merge-strategy based on CG-SCCs