On Weak Stubborn Sets in Classical Planning

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Setting

- solving optimal classical planning tasks with A* search
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- safe pruning with stubborn sets:
  - subset of the operators
  - restrict successor generation to applicable operators in stubborn set
  - guarantee preservation of at least one optimal plan
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- several flavors:
  - weak and strong stubborn sets (Valmari, APN 1989)
  - generalized strong stubborn sets (GSSS) (Wehrle & Helmert, ICAPS 2014)
Contributions

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  - called compliant stubborn sets (CSS) from now on
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  - reflect the (generalized) original definition
  - safe pruning function
  - exponentially higher pruning power than GSSS
  - incomparable pruning power with CSS

Experimental evaluation: confirm theoretical results
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