

Kronk

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Planner Description

This abstract describes the “Kronk” planner that participated in the Sparkle Planning Challenge 2019. Kronk is built on top of the Fast Downward planning system (Helmert 2006) and runs the first iteration of the LAMA configuration (Richter and Westphal 2010) with a few modifications:

- Kronk uses the Python interpreter PyPy instead of CPython.
- Kronk uses at most 10 seconds for invariant synthesis during the translation phase from PDDL to SAS⁺ (Helmert 2009).
- Kronk prunes irrelevant operators after the translation phase for at most 10 seconds (Alcázar and Torralba 2015).
- Kronk uses an additional type-based open list with the type (h^{FF}, g) (Xie et al. 2014).

Planner Name

Kronk is the name of the charming henchman from the animated comedy film “The Emperor’s New Groove”, a movie that features many *llamas*.

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References

- Alcázar, V., and Torralba, Á. 2015. A reminder about the importance of computing and exploiting invariants in planning. In Brafman, R.; Domshlak, C.; Haslum, P.; and Zilberstein, S., eds., *Proceedings of the Twenty-Fifth International Conference on Automated Planning and Scheduling (ICAPS 2015)*, 2–6. AAAI Press.
- Helmert, M. 2006. The Fast Downward planning system. *Journal of Artificial Intelligence Research* 26:191–246.
- Helmert, M. 2009. Concise finite-domain representations for PDDL planning tasks. *Artificial Intelligence* 173:503–535.

Richter, S., and Westphal, M. 2010. The LAMA planner: Guiding cost-based anytime planning with landmarks. *Journal of Artificial Intelligence Research* 39:127–177.

Xie, F.; Müller, M.; Holte, R. C.; and Imai, T. 2014. Type-based exploration with multiple search queues for satisficing planning. In *Proceedings of the Twenty-Eighth AAAI Conference on Artificial Intelligence (AAAI 2014)*, 2395–2401. AAAI Press.