

An Attractor Decomposition Meta-Algorithm for Parity Games

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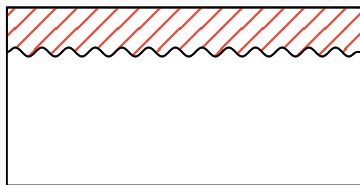
joint work with Marcin Jurdziński

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École normale supérieure Paris-Saclay

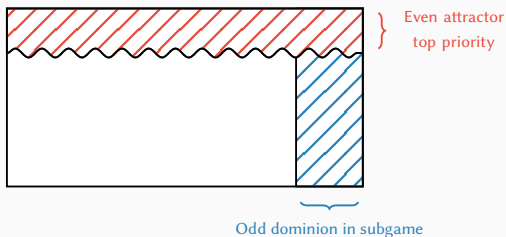
McNaughton-Zielonka-style algorithms

McNaughton-Zielonka

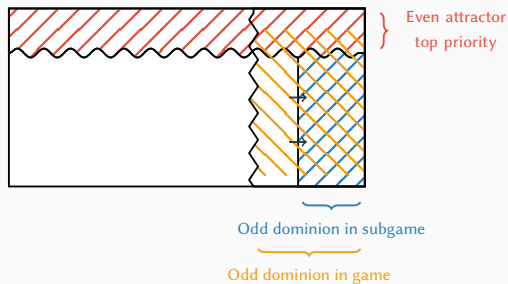


} Even attractor
top priority

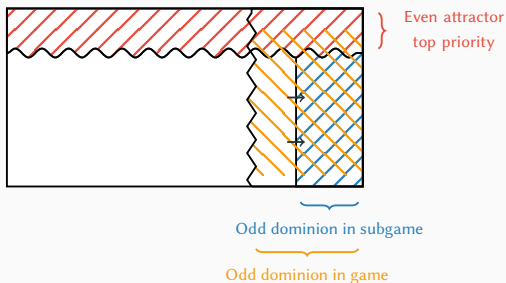
McNaughton-Zielonka



McNaughton-Zielonka



McNaughton-Zielonka



Tree of Even (resp. Odd) recursive calls : embeds in
 $(n, d/2)$ -complete tree.

Parys and Lehtinen-Schewe-Wojtczak

- Similar to McNaughton-Zielonka.
- \approx McNaughton-Zielonka on non-complete trees.
- Those trees are universal!

Attractor decomposition meta-algorithm

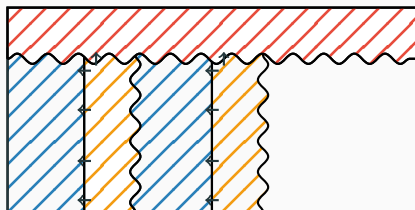
Key ideas

- Meta-algorithm.
- Pair of trees: drives the recursive calls.
- Yields McNaughton-Zielonka, Parys and Lehtinen-Schewe-Wojtczak.

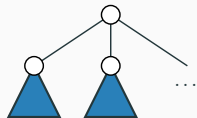
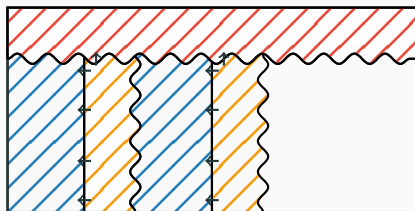
Key ideas

- Meta-algorithm.
- Pair of trees: drives the recursive calls.
- Yields McNaughton-Zielonka, Parys and Lehtinen-Schewe-Wojtczak.
- Goal: find a condition for the algorithm to be correct.

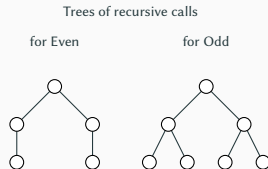
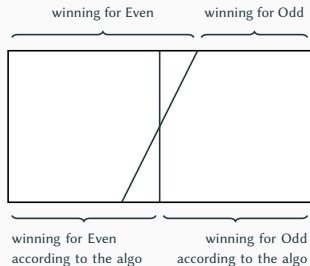
Attractor decomposition



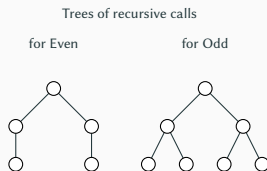
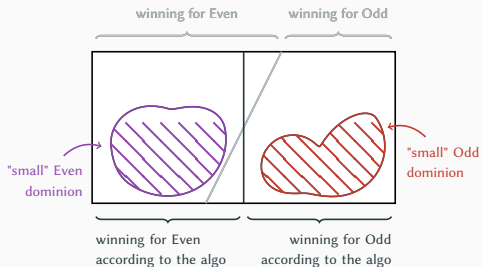
Attractor decomposition



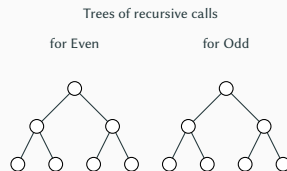
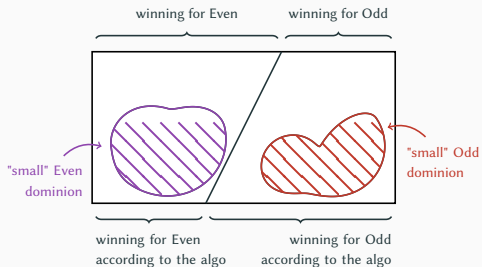
Dominion separation theorem



Dominion separation theorem



Dominion separation theorem



Questions?