

Treewidth computations I. Upper bounds

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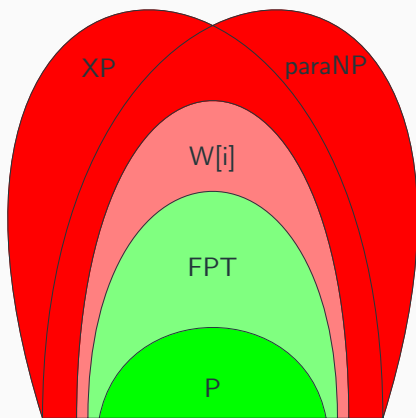
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Motivation

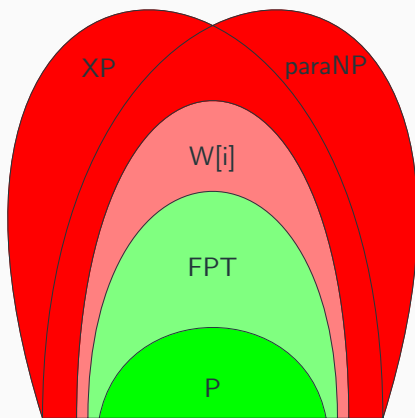
General Motivation

1. Choose infeasible problem
 - Combinatorial Problems
 - Computational Biology
 - Constraint Satisfaction
 - ...
2. Find FPT_{tw} algorithm
3. Model problem as graph
4. Compute *tree composition* with small *tree width*



General Motivation

1. Choose infeasible problem
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4. Compute *tree composition* with small *tree width*
5. Tract the intractable



Why Upper Bounds?

We want (efficiently)

- *High* Lower Bound: Tree dec. not the right tool
- *Low* Upper Bound: Tree dec. works
- Other combinations? – Not so useful

What this paper is about

Exact algorithm: Huge constant factor [2]

- Find a non-optimal tree decomposition
- This is also an Upper Bound

Elimination Ordering Methods

2. Elimination Ordering Methods

- Idea
- Test1
- Test2
- Idea
- Test1
- Test2

2. Elimination Ordering Methods

- Idea
- Test1
- Test2
- Idea
- Test1
- Test2

Separator Methods

Results



H. L. Bodlaender and A. M. Koster.

Treewidth computations i. upper bounds.

Information and Computation, 208(3):259 – 275, 2010.



H. Röhrig.

Tree Decomposition: A Feasibility Study.

Master's thesis, 1998.