

Preview: PACE 2026

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<https://pacechallenge.org/>

Scientific Topic: Agreement Forests

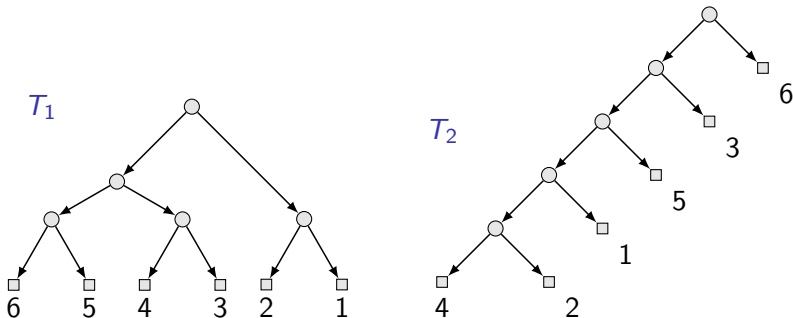
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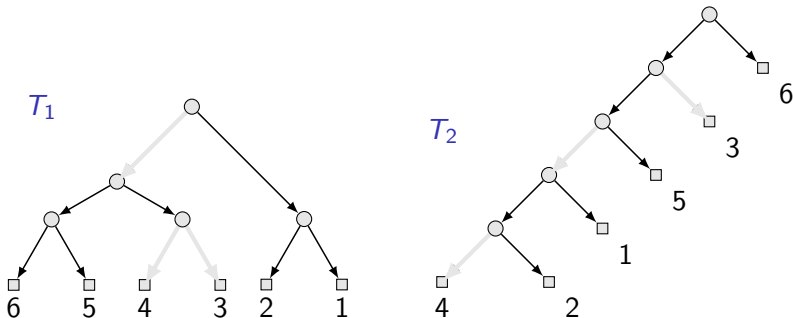
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- ▶ An **agreement forest** of t phylogenetic trees T_1, T_2, \dots, T_t is any forest of phylogenetic trees that can be obtained from each T_i by removing directed edges (+ “cleanup”)



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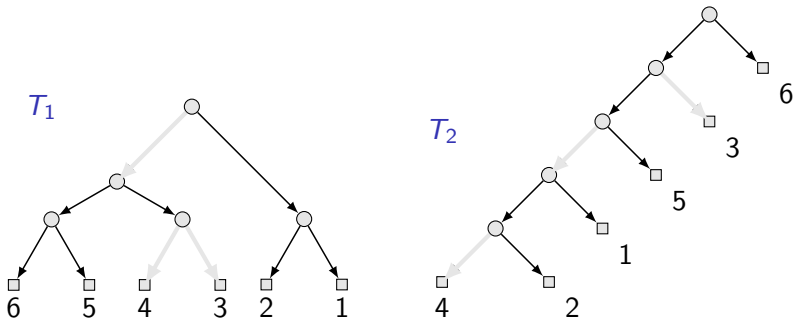
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Results for $t = 2$, $\text{MAF}(T, T') = k$

- ▶ NP-hard Bordewich & Semple, '04
- ▶ $O(2.35^k n)$ time Chen & Wang, '13
($O(2^k n)$ time claimed) Whidden, '13
- ▶ problem kernel with $28k$ taxa Bordewich & Semple, '05

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Note: No other parameterization explored!

Organization and Data

Exact/Parameterized Track

- ▶ **t trees**
- ▶ **idea:** instances accompanied by parameters
(with proof, e.g. decomposition)
- ▶ committee takes requests for parameters in the first months
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mostly follows previous PACE-instances

- September '25 Announcement of the challenge and tracks
- October '25 Definition of input and output formats
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– good luck and an enjoyable competition –