PACE Challenge 2026

About the Challenge

The goal of the *P*arameterized *A*lgorithms and *C*omputational *E*xperiments *Challenge* is to investigate the applicability of algorithmic ideas studied and developed in the subfields of multivariate, fine-grained, or parameterized algorithms. However, submissions are *not* limited to such algorithms.

The Problem

PACE 2026 focuses on the MAXIMUM-AGREEMENT FOREST problem arising in phylogenetics, i.e. the study of evolutionary histories. Consider rooted trees T_1, T_2, ..., T_t with the same set X of leaf-labels. A forest F of rooted trees is called a *rooted agreement forest* if the leaves of F are labelled with X, and each T_i can be translated into F by first removing directed edges and then contracting vertices with out-degree at most one.

Input   A list of phylogenetic trees on the same leaf-set X.
Output   An agreement forest of all input trees with a minimum number of trees.

Note: See the slides of the announcement at IPEC'25.

Example
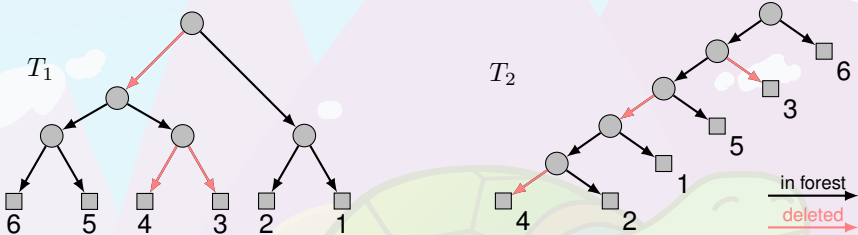
Timeline

Oct'25 Definition of input and output formats
Nov'25 Tiny test set and verifier are provided
Jan'26 Release of public instances and details about the benchmark
Apr'26 Submission via optil.io opens
Jul'26 Final submission deadline and results

Tracks

Exact ($t \geq 2$ trees):
   Derive optimal solutions
Heuristic ($t = 2$ trees):
   Suboptimal solutions OK
Lower Bound ($t = 2$ trees):
   Reach a solution of fixed quality

Parameterized Augmentation

Instances in the "exact" track will be augmented with parameter values (and their proofs) to ease exploitation of structure. We encourage all participants to use the Zulip channel to propose parameters to include.

website   zulip chat

More info: https://pacechallenge.org/2026/

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