

Table S3. Normalised topological properties of the phylogenetic trees reconstructed from empirical and synthetic data with matching sampling dates (See also Figure S1).

	Empirical data	Synthetic data							
Sackin index of tree imbalance	0.102	0.088							
Colless index of tree imbalance	0.076	0.059							
Average size of ladders ¹	0.006	0.007							
Cherries ²	0.663	0.635							
IL number ³	0.339	0.366							
Maximum height of the tips	0.083	0.073							
Pitchforks ⁴	0.451	0.477							
First staircase-ness measure ⁵	0.600	0.632							
Second staircase-ness measure ⁶	0.603	0.598							

1 A ladder is defined as a series of consecutive nodes in the tree, each of which has exactly one tip child. The size of the ladder is given by the number of nodes in the chain.

2 A cherry is a pair of sister tips.

3 The IL number is defined as the number of internal nodes with a single tip child.

4 Pitchforks are clades with three tips.

5 The proportion of subtrees that are imbalanced (i.e. subtrees where the left child has more tip descendants than the right child, or vice versa).

6 The average of all the $\min(l,r)/\max(l,r)$ values of each subtree, where l and r are the number of tips in the left and right children of a subtree.