Visual Computing for Industry, Biomedicine, and Art

CORRECTION Open Access

Correction to: Classes of tree-based networks

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Following publication of the original article [1], in the description of the leaf shrinking procedure as well as in Algorithm 1 and the definition of edge-based graphs in [1], the condition that G contains at least two leaves (i.e., the condition $|V_L(G)| \geq 2$) needs to be omitted. Moreover, in line 2 of Algorithm 1 it should read $|V(\mathcal{LS}(G))| > 2$.

In particular, Algorithm 1 and Definition 3 should read as follows:

Algorithm 1: Leaf shrinking

Input: Connected graph G (e.g., a phylogenetic network N^u) with $|V(G)| \geq 2$.

Output: Leaf shrink graph $\mathcal{LS}(G)$ of G.

1: $\mathcal{LS}(G) \coloneqq G$;

2: **while** $|V(\mathcal{LS}(G))| > 2$ **do**

3: Do one of the following (if applicable):

- Delete leaf x (and its incident edge) from $\mathcal{LS}(G)$.
- Suppress a vertex of degree 2 in $\mathcal{LS}(G)$.
- Delete one copy of a multiple edge, i.e., if $e' = e \in E(\mathcal{LS}(G))$, delete e.
- Delete a loop, i.e., if $e = \{u, u\} \in E(\mathcal{LS}(G))$, delete e.

If no operation is applicable, **return** $\mathcal{LS}(G)$.

4: **end while**

5: **if** $|V(\mathcal{LS}(G))| = 2$ **then**

6: **while** $|E(\mathcal{LS}(G))| > 1$ **do**

7: **if** $\mathcal{LS}(G)$ *contains a multiple edge (i.e., if* $e' = e \in E(\mathcal{LS}(G))$ *or if* $\mathcal{LS}(G)$ *contains a loop (i.e., if* $e = \{u, u\} \in E(\mathcal{LS}(G))$*),* **then**

8: Delete e.

9: **end if**

10: **end while**

11: **end if**

12: **return** $\mathcal{LS}(G)$.

Definition 3 Let G be a connected graph with $|V(G)| \geq 2$. If the leaf shrink graph $\mathcal{LS}(G)$ of G is a single edge, G is called *edge-based*. Else, G is called *non-edge-based*. If $G = N^u$ is a proper phylogenetic network with $|V(N^u)| \geq 2$ and $|X| \geq 2$ and $\mathcal{LS}(N^u)$ is a single edge, we call N^u an *edge-based* network. Else, N^u is called *non-edge-based*.

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Reference

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