What fruits can we get from this tree?

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PROPOSITIONS

accompanying the dissertation

WHAT FRUITS CAN WE GET FROM THIS TREE?

by

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1. Most existing macroevolutionary models rely on the hypothesis that the sub-components of trees do not interact, therefore letting the likelihood be a factorization of terms that comes independently from the tree's edges and nodes. However, such a hypothesis is not always valid. (Chapter 2, this thesis)

2. The BD process is extremely unlikely to reproduce the high degree of branching times clustering present in MBD phylogenies. (Chapter 3, this thesis)

3. Identifying shifts in diversification rates is a non-trivial model selection exercise where one has to choose whether shifts in now-extinct lineages are taken into account or not. Hence, the new framework also resolves the recent debate on such unobserved shifts. (Chapter 4, this thesis)

4. The inference error we aim to quantify is not of stochastic nature. Stochastic errors are usually non-directional. We, instead, aim to expose the bias due to the mismatch between a generative model (that has generated the phylogeny) and the model(s) used in the actual inference. (Chapter 5, this thesis)

5. To a man with a hammer, everything looks like a nail. (Mark Twain)

6. If I were to suggest that between the Earth and Mars there is a china teapot revolving about the sun in an elliptical orbit, nobody would be able to disprove my assertion provided I were careful to add that the teapot is too small to be revealed even by our most powerful telescopes. (Bertrand Russell)

7. I learned very early the difference between knowing the name of something and knowing something. (Richard P. Feynman)

8. Science is built up of facts, as a house is with stones. But a collection of facts is no more a science than a heap of stones is a house. (Jules Henri Poincaré)

9. I learned then what science was about: it was patience. (Richard P. Feynman)

10. It gets easier. Every day it gets a little easier, but you gotta do it every day. That's the hard part, but it does get easier. (The Baboon from Bojack Horseman)