

Stochasticity and Evolution in Food Webs

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<http://gvdr.github.io>

Joint work with

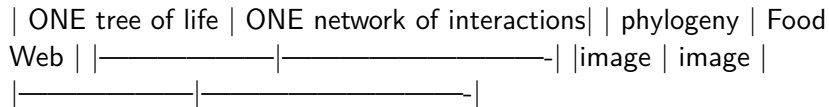
Daniel B. Stouffer (University of Canterbury)

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Mike Steel; Carey Priebe; A. Mooers', D.B. Stouffer's & J. Tylianakis's labs; ...

Funds by the Allan Wilson Centre for Molecular Ecology and Evolution.

species ARE related



Evolution in/of Ecology

Evolution shaped the stochastic backbones of Food Webs

image

Food Webs embedded

Random Dot Product Graphs

image

Phylogenetic vs. Observed traits

$$\text{vcv}(X_e | \text{evolutionary model}) \sim \text{vcv}(X)$$

More questions (than answers)

- ▶ There actually is phylogenetic signal
- ▶ It is (quite) weak
- ▶ It saturates with dimensionality
- ▶ Fine wirings may be deceiving
- ▶ Null model is inadequate

(Not a) Conclusion

Spoiler 1: Evolutionary distinctiveness vs. Web Centrality

Spoiler 2: An ecological informed model of species evolution maybe it's (almost) there.

Thanks!

P.S. I am looking for a research team where to develop further this picture. Contact me if interested: gvd16@uclive.ac.nz