

Stochasticity and Evolution in Food Webs

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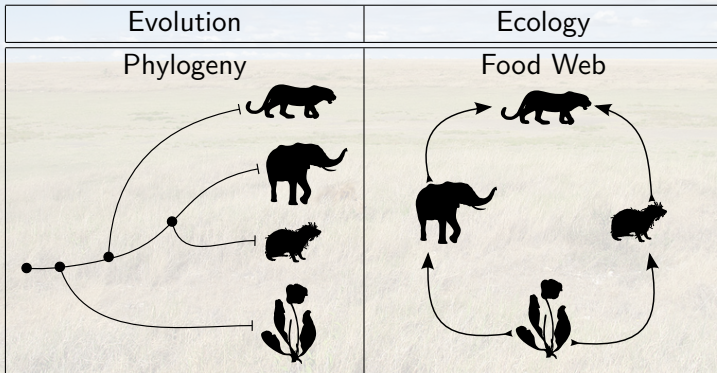
Biomathematical Research Centre

University of Canterbury

gvdr.github.io

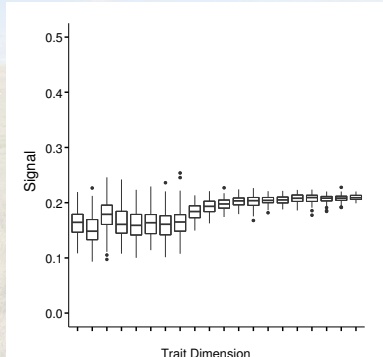
Granada Seminar June 16, 2015

Why?

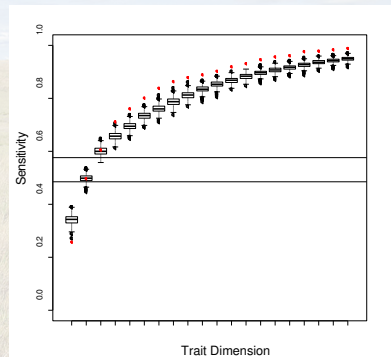


What?

The backbones of a food web exhibits an Evolutionary signal.



Phylogenetic signal



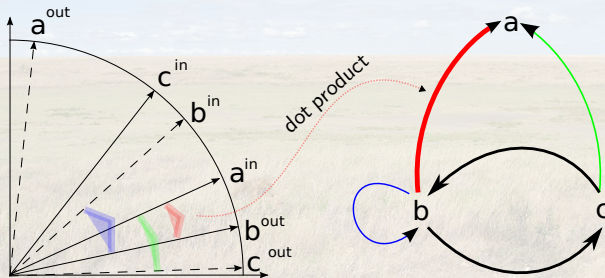
Model sensitivity

1

¹From gvdr & Stouffer, in press

How?

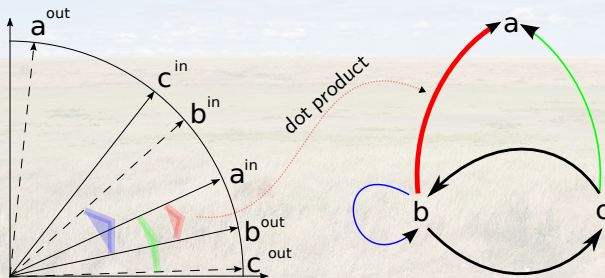
- Random Dot Product Graphs



2

²From gvdr & Stouffer, in press

- Random Dot Product Graphs



- Expected vs. Observed trait distribution

$$\text{vcv}(\mathbb{T}|\tau, \text{model}) \text{ vs. } \text{vcv}(\mathbb{T})$$

²From gvdr & Stouffer, in press

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- What about the null model?

Although species evolve and diversify in a complex network of species interactions, current models of diversification typically ignore species interactions. [These models] do not allow analysing the effect of species interactions on diversification.

Hélène Morlon - Ecology Letters (2014) 17: 508-525

And now?

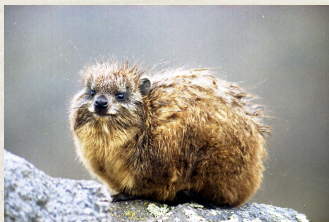
Spoiler: An ecological aware evolutionary model is (almost) there:
yes, I am looking at you, Ornstein and Uhlenbeck ...

Who?

Joint work with Daniel B. Stouffer (University of Canterbury)

Many thanks to Mike Steel; Carey Priebe; A. Mooers', D.B. Stouffer's & J. Tylianakis' lab; ...

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By the way, I'm looking for a postdoc.
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