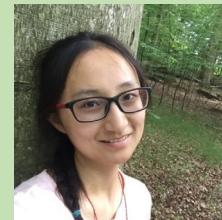


# The Hengduan phytodiversity is higher than expected from **area** and **habitat heterogeneity**

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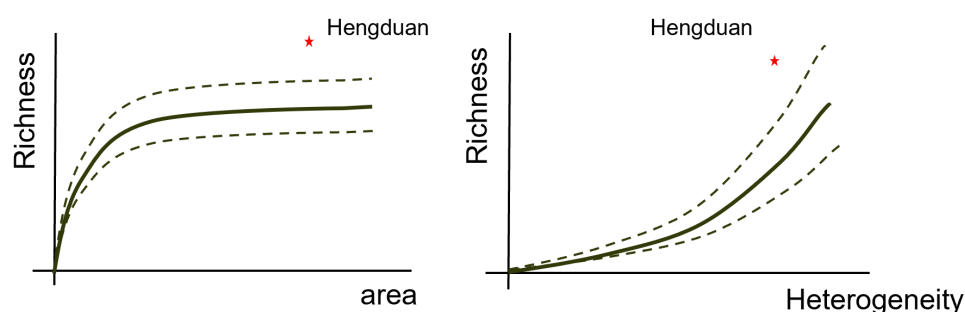
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## Background

- Hengduan Mts host >16k plant species
- Larger area usually host more species due to higher potentials for co-existence
- Heterogeneous habitats host more species due to more diverse niches for diversification
- Can area and habitat heterogeneity predict richness pattern in the Hengduan mountains?

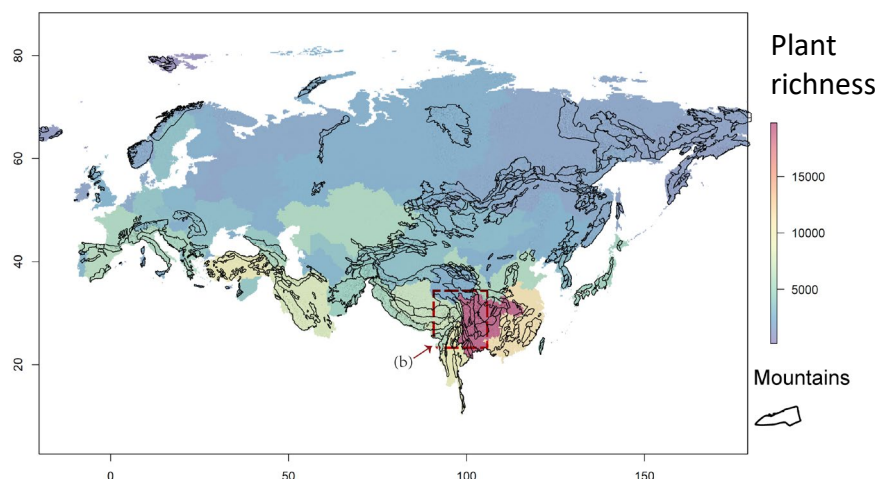
## Methods

- Eurasia scale
  - Data from Kew botanical garden
  - Linear quantile regression
- Hengduan scale
  - County level distribution data
  - Species distribution model
  - Variation partitioning

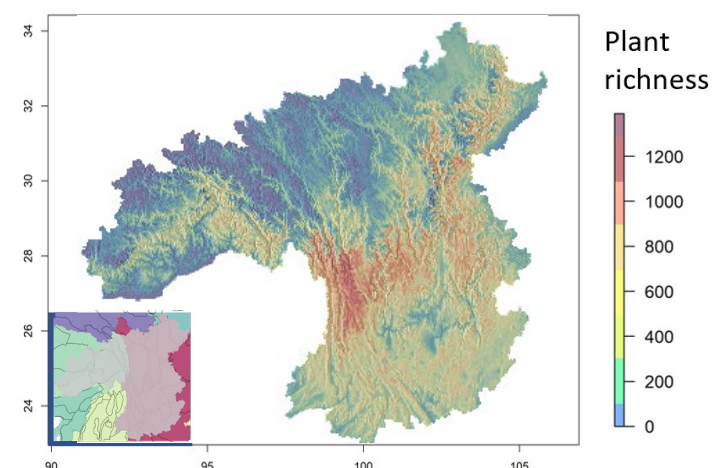


## Results

### Eurasia scale



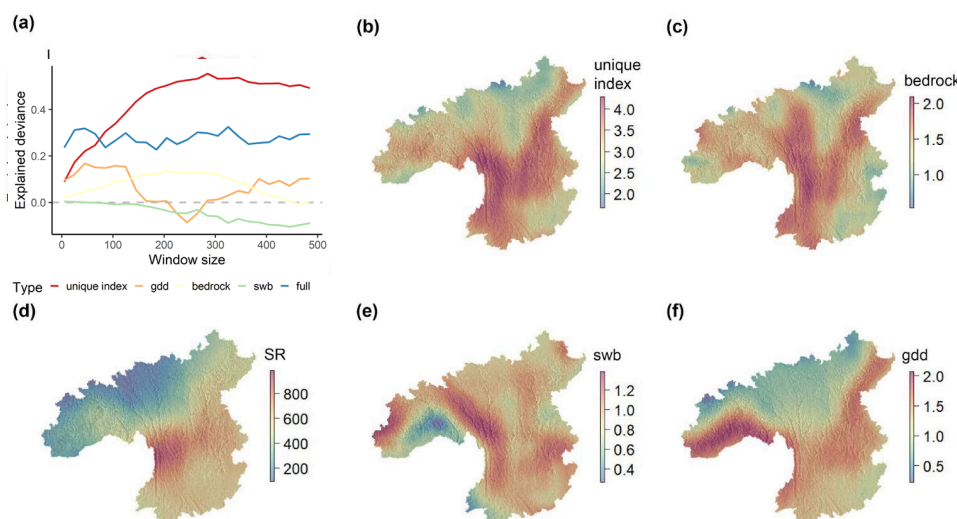
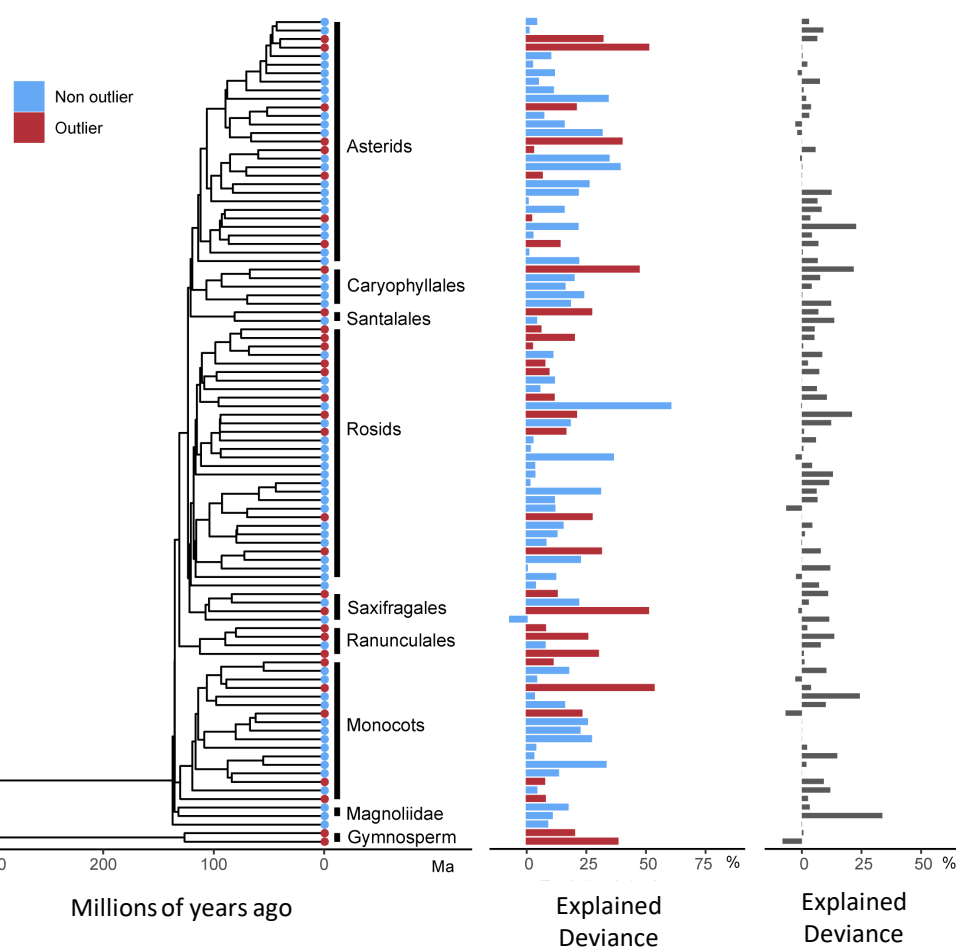
### Hengduan mountain scale



#### Family level phylogeny

#### Heterogeneity

#### Area



## Take home messages:

- At the Eurasia scale, 1/3 families have more species than 90 prediction interval of habitat heterogeneity and they distributed randomly in the phylogeny
- At the Hengduan mountain scale, habitat heterogeneity increases explanation power with increasing of the window size
- The compound heterogeneity explains more than individual heterogeneity