

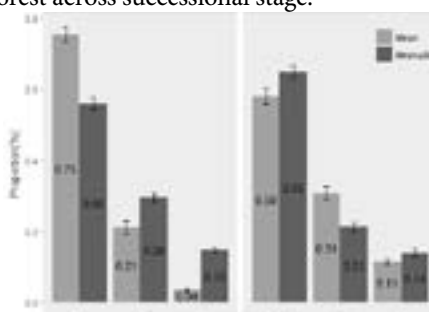
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## The effect of intraspecific trait variation on the detecting of community assembly

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Trait based approach are widely used in the study of different process (dispersal limitation, habitat filtering and limitation similarity) underlying community assembly. However, most researches are based on trait mean value, which only consider interspecific trait variation. Due to the genetic and environmental difference, functional trait can also exhibit significant intraspecific trait variation (ITV). Thus disentangle whether and how will the detection of relative importance of ecological process be influenced by the inclusion of ITV is of significant meaning for our understanding of community assembly. Here, we collected community composition data and 8 functional traits in a young (24-ha) and old (25-ha) growth forest plot. We analyzed the relative importance of different process based a recent developed modeling technique (STEPCAM). Moreover, we detect the effect of ITV on the relative importance with and without ITV. We found that dispersal limitation are most important at 20 m in two forest plot, followed by habitat filtering, and limiting similarity had minor effect. When taking ITV into consideration, the proportion of deterministic process (habitat filtering and limiting similarity) improved at early successional stage, while such effect was not found at late successional stage. Moreover, based on single trait, we found the deterministic process only improved for the nutrition absorb related trait when we consider of ITV at late successional stage, which imply the importance of soil condition on community assembly at this scale. In conclusion, our study highlights the importance of ITV for the detection of trait based ecological process in this temperate forest across successional stage.



### Recent Publications

1. Z Yuan, A Gazol, F Lin, X Wang, et al. (2016) Scale-dependent effect of biotic interactions and environmental conditions in community assembly: insight from a large temperate forest plot. *Plant Ecology* 217(8):1003-1014.
2. Z Yuan, A Gazol, X Wang, et al., (2016) Pattern and dynamics of biomass stock in old growth forests: The role of habitat and tree size. *Acta Oecologica* 75:15-23.
3. X Wang, T Wiegand, N J B Kraft, et al. (2016) Stochastic dilution effects weaken deterministic effects of niche-based processes in species rich forests. *Ecology* 97(2):347-360.
4. X Wang, H Li, T M Bezemer and Z Hao (2016) Drivers of bacterial beta diversity in two temperate forests. *Ecological Research* 31(1):57-64.
5. X Wang, T Wiegand, N G Swenson et al. (2015) Mechanisms underlying local functional and phylogenetic beta diversity in two temperate forests. *Ecology* 96(4):1062-1073.

### Biography

Zhanqing Hao is focused on the biodiversity and ecological functions. As one of the Chinese Scientists who participated in biodiversity research, he initiated the establishment of 25-ha temperate permanent monitoring forest plot in Northeast China at 2004, which is the earliest temperate forest plot in China and had been an important member of Chinese Forest Biodiversity Monitoring Network (CFoBio). After that, a series of forest plots had been established along successional stages and latitude gradients. Those entire forest plots provided the opportunity to detect the biodiversity patterns and maintaining mechanisms in temperate forests.

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