UNIVERSITY of SALZBURG
Faculty of Natural Sciences

Symposium

n-dimensional hypervolumes in ecology and beyond

November 24th – 25th 2016

University of Salzburg | NAWI | Hellbrunnerstraße 34 | HS423

Niche theory is one of the most fundamental concepts in ecology and has long been conceptualized as *n*-dimensional hypervolumes (sensu Hutchinson 1957). Only recently, satisfying mathematical and algorithmic treatments of hypervolumes have been realized. The ability to quantify the size and the overlap of *n*-dimensional hypervolumes is an important methodological and conceptual step in ecology, but may also open new frontiers in various other disciplines. Unlike common ordination procedures used to reduce the number of dimensions, *n*-dimensional hypervolumes fully consider each individual factor (dimension). Thus, this concept has the potential to handle multivariate and complex data without oversimplifying the patterns and camouflaging important explanatory variables.
In the symposium, we will introduce and compare different statistical approaches, give examples of their applicability and discuss open questions and the potential of *n*-dimensional hypervolumes in ecology and beyond.

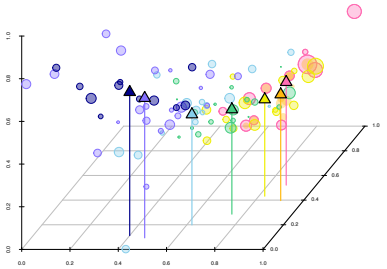
Thursday, November 24th

14:00 – 15:00	The potential of *n*-dimensional hypervolumes in ecology and beyond – An introduction and open questions – Robert R. Junker (University of Salzburg)
15:00 – 16:00	Extending stochastic geometry to multiple hypervolume delineation methods – Benjamin Blonder (University of Oxford)
16:00 – 16:45	coffee break
16:45 – 17:45	How to calculate size and overlap of hypervolumes? A mathematical comparison of different approaches – Manuela L. Schreyer, Raoul Kutil, Arne Bathke and Wolfgang Trutschnig (University of Salzburg)
19:00	Dinner at Restaurant Stieglkeller, Festungsgasse 10, Salzburg

Friday, November 25th

09:30 – 10:30	Trait probability densities: a framework for functional diversity analyses across scales – Carlos Pérez Carmona (University of South Bohemia)
10:30 – 11:00	*n*-dimensional hypervolume reveal mechanisms underlying resource partitioning between native and invasive species – Jonas Kuppler (University of Salzburg)
11:00 – 12:00	Toward methods avoiding the underestimation of beta functional diversity – Francesco de Bello (University of South Bohemia)
12:00	lunch at Mensa – End of symposium

Time slots include talks and sufficient time for discussions.



Guests are welcome.