# The Ecology, Evolution, Environment & Behavior UZH / ETH Joint Seminar Series

*Paleoclimate supplements contemporary environment in driving plant functional diversity and vegetation-related ecosystem structure across broad spatial scales*

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| Date/Time: | Thursday, 2018-05-17<br>15:00 to 16:00 |
| Place: | Y15-G-40/UZH Irchel<br>Winterthurerstr. 190;8057 Zürich |
| Access: | only intern |
| Host: | Gabriela Schaepman-Strub, UZH |

Abstract:
Functional diversity is a key aspect of biodiversity, determining environmental responses and ecological impact, with ecosystem structure a key outcome, itself also of strong functional importance. While it is evident that species diversity is co-determined by contemporary drivers and historical dynamics, the importance of the latter for functional diversity and ecosystem structure remains little explored. Here, we synthesize new work on the relative importance of historical and contemporary drivers for plant functional diversity and vegetation structure, covering continental to global scales, and a range of historical drivers. We find that Quaternary-scale climate influences broad-scale patterns in assemblage trait means and that high variability and distance to stable areas is associated with reduced functional diversity across multiple plant groups and regions, with links also to deeper-time climate. However, we also report findings showing that the massive climate-driven late Cenozoic taxonomic tree diversity losses have not left strong functional diversity imprints, albeit climatic niche space filling has been pruned. Our findings show that plant functional diversity and vegetation-related ecosystem structure cannot be fully understood from contemporary drivers, but often also reflects long-term dynamics, with paleoclimate as a key factor, with important implications for responses to current and near-future anthropogenic climate change. Notably, our findings suggests that strong, long-lasting disequilibria must be expected, although such effects will likely be more moderate than for taxonomic composition.

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