



# Ecology Seminar



**Tuesday, 21.10.2025**  
**16:30h**

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## Response balance - a neglected mechanism stabilising ecological communities



Understanding how ecological communities remain stable under environmental change is key to predicting ecosystem responses. While response diversity—variation in how species respond to environmental fluctuations—can buffer communities and enhance stability, its effects may vary across disturbance regimes. Using model simulations, meta-analysis, and a protist microcosm experiment, studies show that community stability is driven largely by the distribution of species' fundamental responses. A novel metric, imbalance, quantifies this variation and strongly predicts stability, with low imbalance promoting high temporal stability through population stability and asynchrony. Response diversity metrics like dissimilarity and divergence support stability under fluctuating conditions but may be less effective under pulse disturbances, where uniform resistance or rapid recovery across species enhances stability. These findings highlight that both the nature of disturbance and the structure of species responses critically shape ecological stability.

**Where? Lecture Hall B2, Building B2, Branišovská 1760**