# Submission inquiry

Ecological communities around the globe respond to the disturbances imposed by the climate crisis and global change induced by humans. Therefore, there is a large interest in ecological stability across all disciplines of ecology, as well as from decision makers and policy. To meet this need, observations of ecological stability need to be compared both within and among systems. However, it is not clear how to interpret differences in stability from empirical studies of systems that differ in community growth rate. In the proposed article, we will demonstrate how growth rate affects observed stability. We will present simple methods to correct for these effects of growth rate in four widely-used stability metrics: temporal stability, resilience, recovery, and resistance. These corrected measures are less sensitive to the growth rate, and thus mostly influenced by other factors, such as differences in the disturbance regime or in a community’s response to that regime. To demonstrate the applicability/usefulness of our proposed methods, we will apply them to a published empirical data set, which comprises a wide range of organisms, from aquatic microbes to terrestrial plants. We will show that stability trends from this empirical data can change strongly when growth rate is accounted for; potentially reversing conservation priorities. Based on our findings, we advocate to acknowledge the effect of growth rate in all studies comparing stability. To do so, we suggest to consider both standard measures of stability and our proposed corrected measures of stability. Our findings are relevant to disentangle differences of stability across all taxa, ecosystems, and biomes. Our work thus paves the way for systematic global analyses of ecological stability. The manuscript will be written by a team of six scientists from the German Centre for Integrative Biodiversity Research Halle-Jena-Leipzig (iDiv) and the Helmholtz Institute for Functional Marine Biodiversity at the University of Oldenburg, Germany (HIFMB). The team comprises experts with a strong background in both aquatic and terrestrial ecology. Both institutes have a strong focus on the synthesis of methods and observations and the identification of scale-dependent patterns in ecological data.

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