

sDiv working group meeting summary

“sROOT 3

Root Trait functionality in a Whole-Plant Context”

Our third sROOT meeting took place from Jan 27-31 at iDiv in Leipzig. All participants from sROOT1 and sROOT2 joined our meeting and we welcomed our new database student Karl Andraczek. Since we had so many participants, we decided to work in parallel on two main projects.

Daniel Laughlin and Liesje Mommer were leading the first project discussing first results of the relationships between root traits and environmental gradients across the globe. This had been the main topic of sROOT2 where we had linked the root trait database gROOT with the global species-distribution database sPLOT and key environmental variables. The number of data points is overwhelming and requires solid and clear procedures for statistical analyses. We discussed pros and cons of different approaches and their results. We agreed on a checklist of how to run the final analyses and write a draft of the manuscript.

Alex Weigelt was leading the second group that aimed to link the root economics space framework with a collaboration and construction axis (Bergmann et al, 2020 ;

<https://www.biorxiv.org/content/10.1101/2020.01.17.908905v1>) to leaf traits. Prior to the workshop Karl had been collecting four main leaf traits (SLA, Leaf thickness, Leaf nitrogen, Leaf Dry Matter Content) from the trait database TRY3.0 to enable preliminary analyses during the workshop. We further expanded this database during the workshop, performed a number of quality checks and provided first analysis for discussion in the group. In addition, we discussed our main hypotheses: Which leaf traits are analogues of belowground traits? How do we expect the two trait spectra to align? To test whether patterns of trait correlations on the species level are confirmed on the individual level, a subgroup led by Luke McCormack and Catharine Roumet additionally collected a so called ‘individual’ database where above and belowground traits have been measured on the same individual. This will help us to come up with robust conclusions on the integration of above- and belowground plant traits.

In between these two main tasks we also discussed the status of the two papers from the first sROOT workshop which are currently under revision, one in Science Advances and the other in Global Ecology and Biogeography. In addition, sROOT featured the weekly iDiv seminar with a combined presentation of Daniel Laughlin and Alex Weigelt.

Our third meeting was again highly inspiring and characterized by a friendly, trusting and constructive spirit during the whole week and much facilitated by the tireless and skillful support of the sDiv team. As always, our workshop included evenings of board and card gaming and we even did a group outing in an escape room. We escaped the Middle Ages, the Egyptian pyramids and a new virus... the latter being quite visionary in retrospect!

