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Connecting the dots between computational tools to analyse soil-root water relations

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Understanding (and manipulating) water relationships in the soil-plant system is a crucial issue for current and future breeding efforts. In the recent years, many modelling and numerical tools were developed to help quantify and understand water flow in the soil-plant system, at multiple scales (organ, plant and field). Most of these tools were developed to work together, or at least be compatible. However, for the un-informed researcher, they might seem disconnected, forming an unclear and disorganised succession of tools.

In this presentation, we present different tools developed to understand plant-water relations in a comprehensive and structured network. The aim of this "water tools network" is to inform researchers about existing tools and help them understand how their data (past and future) might fit within the network. We also demonstrate the power of the network with a set of case studies from the literature. Finally, we discuss existing gaps in the network and how we can move forward to complete it.