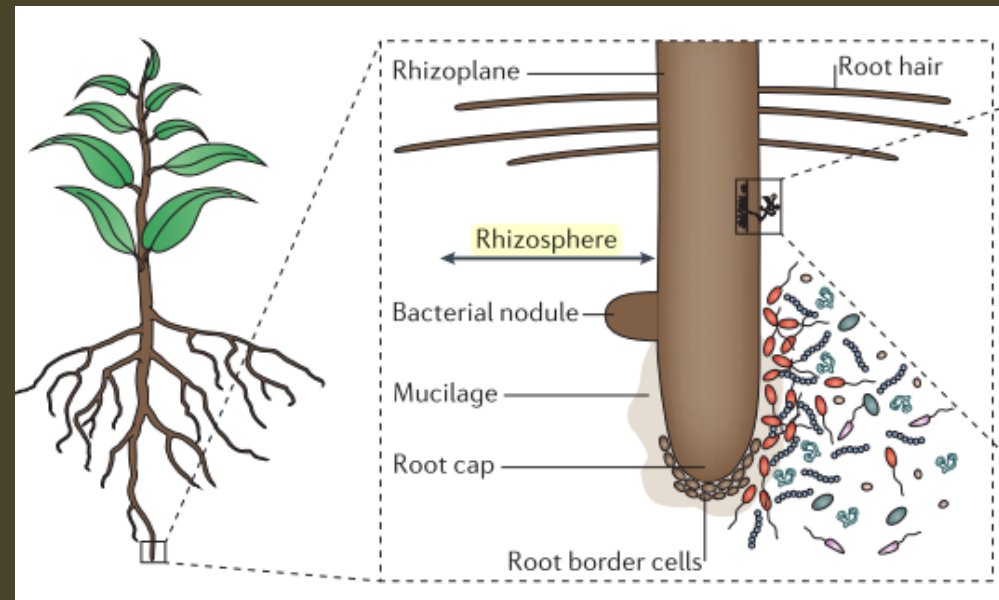


Topic I: How do interactions between plant roots and microbes influence soil organic matter turnover?

Microbial dynamics at root exudation 'hotspots' in the soil

How are root exudates affecting soil microbial community dynamics and decomposition processes?



Phillipot 2003, Nature Reviews

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Topic II: Do microbial co-occurrence networks reflect microbial interactions in environmental samples?

The investigation of microbial interactions within communities is one of the most difficult challenges in the field of microbial ecology. One technique widely used is "microbial co-occurrence" analysis applied to taxonomic data of environmental samples.

The idea is simple: to look which microorganisms have the tendency to co-occur together and which tend to avoid each other. From this analysis a network of interactions is obtained, where the nodes are the microorganisms and the edges are the possible interactions.

The objective of this project is to test some of the known tools of network reconstruction on an artificial data set allowing us to assess whether they are suited to detect real interactions in microbial samples.

Basic knowledge of R is required.

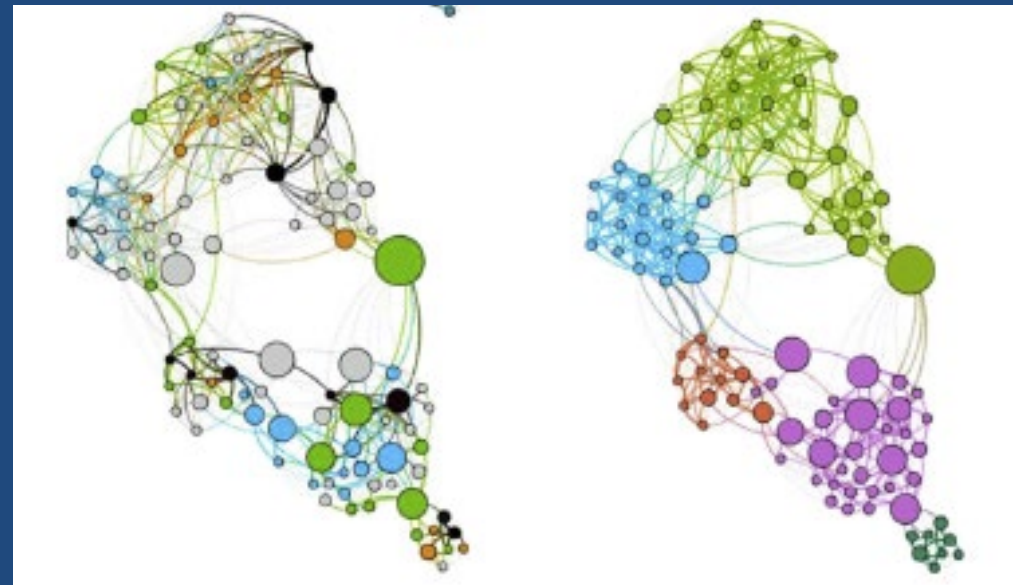


Fig: Egidi et al, Fungal ecology, 2019

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