

SG.04-O-11

Sala 1 - jueves, 21 de octubre, (bloque mañana: 13:00 h.)

**Habitat-scale dependency of ectomycorrhizal fungal community assembly in Mediterranean mixed forests****Prieto Rubio, Jorge**<sup>1</sup>; López-García, Álvaro<sup>2</sup>; Pérez-Izquierdo, Leticia<sup>3</sup>; Garrido, José Luis<sup>4</sup>; Alcántara, Julio Manuel<sup>5</sup>; Azcón-Aguilar, Concepción<sup>6</sup>; Rincón, Ana María<sup>7</sup>

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Assembly of biological communities depends on deterministic, i.e., selection, and stochastic processes, i.e., dispersal limitation and drift, and their extent can vary across spatial and temporal scales. However, the analysis of assembly processes from habitat scale-based approaches remains poorly tested in ectomycorrhizal fungal (ECM) communities despite their key role in forest biogeochemical cycling and host plant fitness. To address this, we analyzed the assembly processes operating in ECM communities of Mediterranean mixed forests in Southern Spain. ECM community structure of root tips of *Cistus* and *Quercus* spp. was characterized by high-throughput sequencing. The relative contribution of deterministic and stochastic processes assembling fungal taxa was inferred by using phylogenetic and compositional turnover descriptors across spatial scales (regional, local, plot and host plant within plot). We also analyzed host plant phylogeny, soil variables and spatial factors (geographic distances) that could impose selection and dispersal limitation. Our results revealed that the contribution of stochastic processes on root-tip ECM community assembly was higher than selection. As expected, selection decreased with scale and was driven by plant phylogeny and environment. Dispersal limitation increased at finer scales whilst drift showed the opposite pattern, suggesting possible influence of priority effects on community assembly. This study highlights the potential of phylogenetic information to infer ECM community responses and brings new insights into ecological processes affecting Mediterranean forest ecosystem structure and dynamics.

SG.04-O-12

Sala 1 - jueves, 21 de octubre, (bloque mañana: 13:15 h.)

**Spatial dynamics of soil fungal communities after forest clearcutting in a *Pinus sylvestris* forest****Centenaro, Giada**<sup>1</sup>; de Miguel, Sergio<sup>2</sup>; Martínez-Peña, Fernando<sup>3</sup>; Bonet, José Antonio<sup>4</sup>; Dashevskaya, Svetlana<sup>5</sup>; Ponce, Ángel<sup>6</sup>; Alday, Josu G.<sup>7</sup>

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Forest management practices can highly affect forest ecosystem functioning. In particular, tree removal by clearcutting can produce severe impacts in soil processes and soil biota, due to the total elimination of the overstorey plant species.

Although temporal changes in soil fungal communities after clearcutting have been described in several studies, potential site-dependent spatial variations in fungal community after clearcutting have not been analysed yet.

Here, using intensive systematic monitoring, we describe the spatially explicit clearcutting effects on soil fungal community composition and main soil properties of three *Pinus sylvestris* clearcut areas and surrounding non-harvested forests located in northern Spain (Soria). The spring soil fungal community was analysed by high-throughput sequencing of fungal ITS2 amplicons, describing the compositional spatial changes.

Our preliminary results suggest a clear spatial change in soil fungal community composition from the forest border to the center of the clearcut, in relation to a variation in C:N ratio and pH. Clearcutting favored soil saprotrophs, but hampered ectomycorrhizal fungi.

Overall, forest clearcutting strongly affected fungal community and soil properties, highlighting the importance of recognizing the impact of anthropogenic silvicultural practices on forest ecosystem functioning and management.