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BOOK OF ABSTRACTS

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Plant-pollinator interactions: a study along spatial-temporal gradient in different land management types within the Stelvio National Park

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Plants and arthropods interact with each other creating complex networks, such as those related to pollination, that are still little known, especially in high-mountain ecosystems. Here, these interactions are expected to be strongly modified by climate change and habitat management. We investigated how the flower-visitor network change along an altitudinal gradient, during the plant growing season and among different land management types (orchards, hay-meadows, pastures, high-altitude grasslands) in order to identify the focal plant and arthropod species responsible of network structure and stability. We selected 14 sampling plots located along the Martello valley (Bolzano, Stelvio National Park, Italian Alps). We focused on flower-visiting arthropods of three main plant groups corresponding to different floral morphology (Asteraceae, Fabaceae, Ranunculaceae/Rosaceae) along altitudinal (from 900 to 2700 m asl) and seasonal (from May to August 2021) range. We used an integrated approach involving manual sampling and simultaneous in-field video observations. The first approach allows the identification of flower visitors at low taxonomic level and the analysis of their pollen load. The second approach allows to describe arthropod behaviour on flowers in order to hypothesize their functional roles. We sampled more than 1900 specimens belonging to 11 orders, of which Diptera, Thysanoptera, Hymenoptera and Coleoptera are the most represented. Flower visitor community change along the altitudinal gradient and during the plant growing season as well as among different land management types. We are confident that this study will be able to provide novel information about plant-arthropod interactions in climate and human driven areas of the Alps.