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on
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Book of Abstracts

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P.21 Testing the acute thermal sensitivity of *Ips typographus* (Linnaeus, 1758) along an altitudinal gradient

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The European spruce bark beetle, *Ips typographus* (Linnaeus, 1758), is considered a major pest of Norway Spruce across Europe, due to the high economic damage and landscape impact it is able to cause during its outbreaks. Nevertheless, *I. typographus*-originated disturbances may have a positive effect in protected areas in terms of increasing biodiversity and species richness. Due to the global warming, the chance of bark beetle-caused disturbances is expected to increase. Hence, studying the ecophysiology of this species is important in order to predict its future distribution. The aim of this study is to investigate the plasticity of *I. typographus* in a climate-changing scenario, by measuring its metabolism, an aspect that has not been investigated so far. The metabolic rate of insects is generally measured with a respirometer, recording the flux of carbon dioxide emitted by resting individuals. In this study, applying a space-for-time substitution, two altitudinal transects with four sampling sites each were selected (from 900 to 1750 m) in two valleys in the Province of Trento, NE Italy, (Val dei Mocheni and Val Cadino). A control population was reared on spruce logs kept in a climatic chamber at constant conditions (20°C and 60% RH). Preliminary results were useful to identify a continuous and, rarely, a cyclic gas-exchange pattern, and it did not show a significant trend of the total metabolic rate of the adult individuals collected along the gradient. Further experiments will be performed to characterise the metabolism of this species with respirometry.