POSTER PRESENTATION

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Climatic cabinet tests prove reduced thermal tolerance in *Troglohyphantes* spiders

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According to direct field observations and theoretical models, anthropogenic global warming may significantly influence and modify the underground cave climate in different ways compared to what happens outside. Despite empirical evidence supports the existence of a reduced physiological tolerance to temperature fluctuations in subterranean species, direct experiments have been rarely performed. In this work, we experimentally tested the thermal tolerance of *Troglohyphantes* spiders (Araneae, Linyphiidae) inhabiting caves and other subterranean habitats across the Western Italian Alps. Alive specimens of 11 species of *Troglohyphantes* spiders were collected in the field and carried to the laboratory. We used standard climatic test cabinets to evaluate their physiological thermal tolerance. We set up the climatic test cabinet to warm up progressively, from the natural temperature (i.e. the one recorded in the cave) with increasing ramping temperature set at 1°C/day. Experiments included replicates of 10 specimens each, including a control. As a result of their adaptation to a thermally-constant environment, we observed that *Troglohyphantes* spiders display a general stenothermal profile and that the specific response of the individual species to increasing temperatures varies significantly according to the degree of subterranean adaptation. This results corroborates our previous results based on species distribution modelling, pointing out a significant decline in habitat suitability in respect to climatic alterations due to climate change.