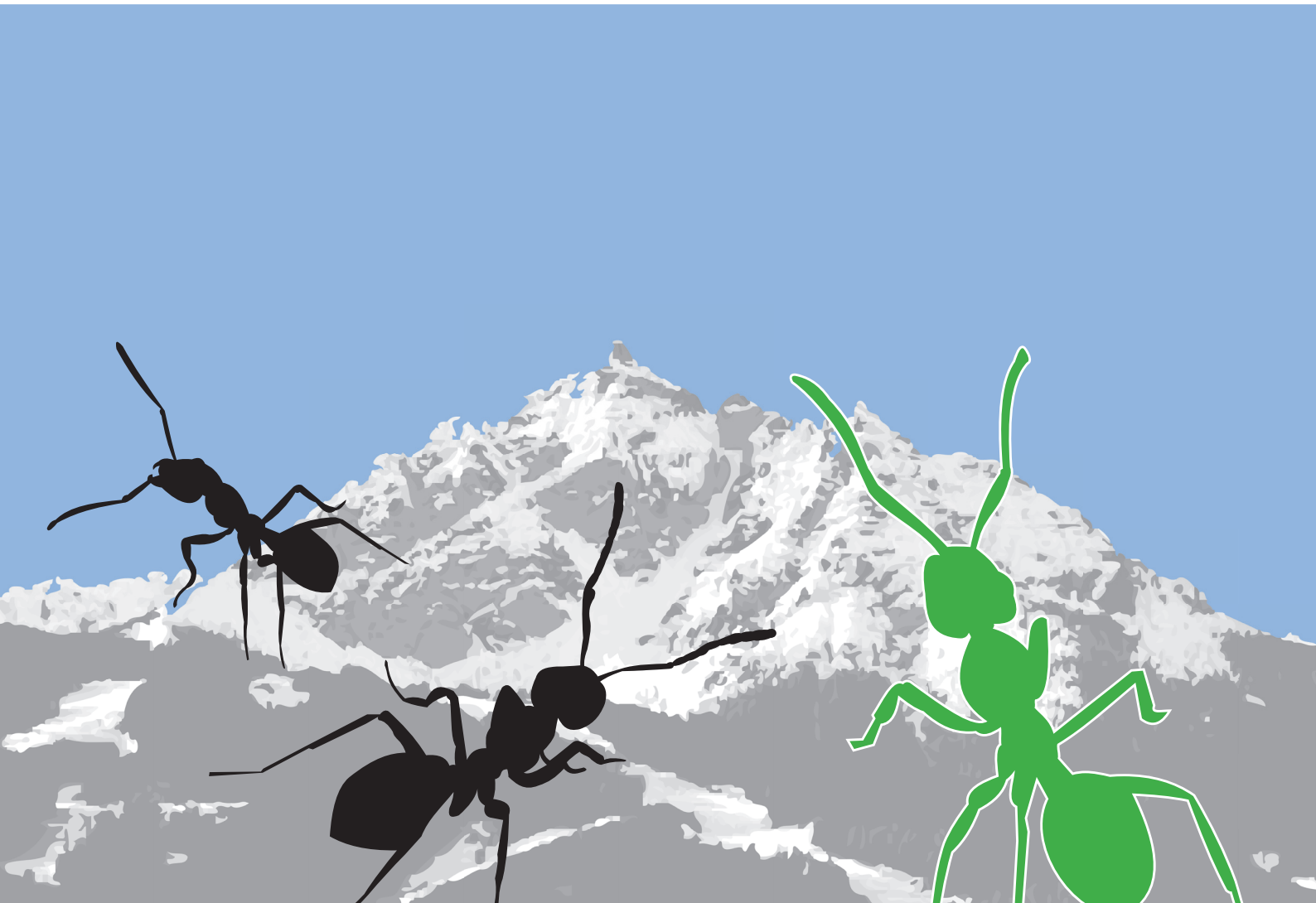
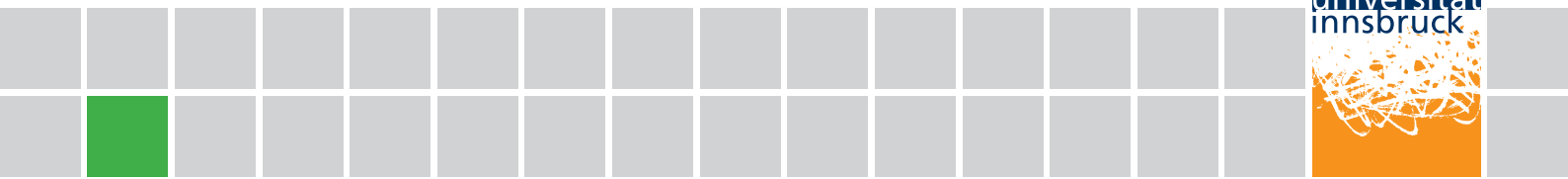


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ABSTRACTS

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Seasonal changes in microhabitat preferences in a gypsy ant: colony relocation searching for optimal temperatures promotes intra-specific competition

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Nest relocation is a common strategy to search the best compromise between good resources and enemy avoidance. The risks associated with relocation (i.e. predation of the brood and the queen during and just after relocation) should be highly compensated by the new site conditions. In southern Spain (Doñana), we followed two populations of a monogynous species, *Aphaenogaster senilis* during five years, in order to know whether abiotic and / or biotic factors affected the process of relocation. Under the Mediterranean conditions of our study sites, we predicted that nests would move in search of favorable abiotic conditions (temperatures) but that colony relocation would also be constrained by intra-specific competition. We showed that in spring, when brood biomass increases enormously, spatial arrangement of colonies is overdispersed suggesting colony mutual exclusion. High competition for space in spring is not accompanied by overt aggressive interactions or higher foraging distances. In spring and fall, colonies move to bare soil where they can benefit from heat necessary for brood pupation. However, in summer colonies avoid the elevated ground temperatures by nesting under the scrubs. This was confirmed experimentally: in summer shaded nests remained longer without moving than control ones; and observationally: lower temperatures were recorded at different soil depths of nests under scrubs than those in bare soil (high and risky temperatures). However, moving the nest under scrubs seems to constrain intra-specific competition, as covered nest are closer to neighbors than uncovered nests, especially in spring. We conclude that *A. senilis* has a seasonal pattern for nest relocation motivated mainly by high temperatures of the Mediterranean summer, while intra-specific competition is higher in spring when the colony invests in growth.