

# Spatio-temporal dynamics of bumblebees foraging under predation risk

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We analyze 3D flight paths of bumblebees searching for nectar in a laboratory experiment with and without predation risk from artificial spiders. For the flight velocities we find mixed probability distributions reflecting the access to the food sources while the threat posed by the spiders shows up only in the velocity correlations. The bumblebees thus adjust their flight patterns spatially to the environment and temporally to predation risk. Key information on response to environmental changes is contained in temporal correlation functions, as we explain by a simple emergent model.

[1] F.Lenz, T.Ings, A.V.Chechkin, L.Chittka, R.Klages, *Phys. Rev. Lett.* **108**, 098103 (2012)