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Moths smell with their antennae THOMAS SPENCER, MATTHEW BALLARD, ALEXANDER ALEXEEV, DAVID HU, Georgia Institute of Technology — Moths are reported to smell each other from over 6 miles away, locating each other with just 200 airborne molecules. In this study, we investigate how the structure of the antennae influences particle capture. We measure the branching patterns of over 40 species of moths, across two orders of magnitude in weight. We find that moth antennae have 3 levels of hierarchy, with dimensions on each level scaling with body size. We perform lattice-Boltzman simulations to determine optimal flow patterns around antennae branches allowing for capture of small particles.

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