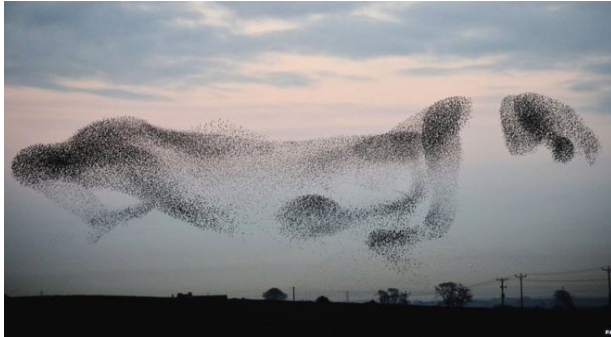


Peanut butter-like swarms

Context:

Seeing that starlings take to the sky in swirling vortices and that ants teem like rivers, why do flying swarms not have a specific pattern too ?

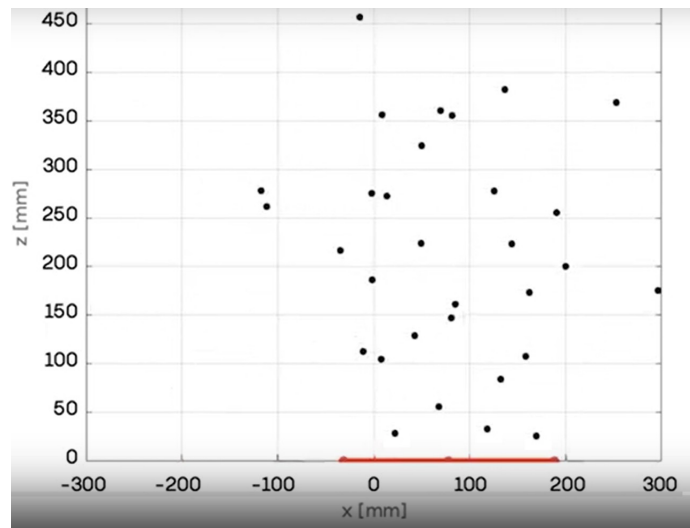


Experience:

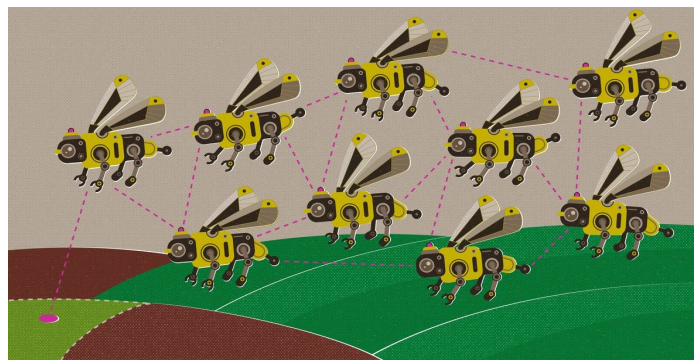
Researchers observed a swarm of male midges during mating season and how the swarm, viewed as a whole system, reacted to the movement of an object they were attracted to.



Results:



The results showed a **lag** between the different layers, midges closer to the ground moved along the object contrary to the higher ones which were more shattered..



Interpretation:

..This lag highlights the resemblance of the swarm behavior **to a viscoelastic material**. The fact that its viscosity overpowers its elasticity helps to maintain the mass unified, leading researchers to target the biological relevance of its damping look .



Potential application:

Those results, if even more understood, could be used to control **the spread of information** through social networks or **to reproduce animal swarm behavior** in drone or robot swarm.

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Reference :

How swarming insects act as fluids, by

J.Cepelewicz (Quanta Magazine)