

Natural selection by buoyancy and the ecology of pattern in convection

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A conceptually guided literature review will be offered, in an attempt to frame the issue of pattern formation in evolutionary terms. Gravity is omniscient about density variations, and rewards them with a conversion from potential to kinetic energy. Some of that kinetic energy can induce further density patterning, with a pattern and scale dependent efficiency, by shaping latent heat release and the redistribution of sensible heat. Although fluid information storage lacks the long time reservoirs of biological life, winning strategies that coordinate lateral interaction mechanisms in complex patterns can persist, outcompete naive unicellular bubble strategies, and perhaps replicate remotely through faster-than-wind wave communication.

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