

# **Active Cargo Transport in Living Cells**

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The problem of active matter, one of the grand challenges of soft matter physics, arises prominently regarding cells, where a dominant transport mechanism is not classical Brownian motion, but instead active transport. We find that active motion clusters into two distinct random processes, one short in directional persistence, the other long, their intermittent combination producing an efficient target-seeking process – active transport is not directional! This design principle, macroscopic optimization by regulated microscopic active fluctuation, may also be useful in constructing other forms of active matter.