# Surfing on turbulence: a strategy for plankton navigation

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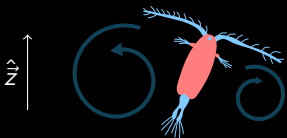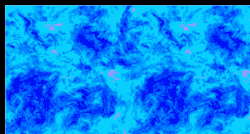[2]Department of Integrative Biology, University of California, Berkeley, CA 94720-3140, USA

# Surfing strategy
A strategy for planktonic navigation
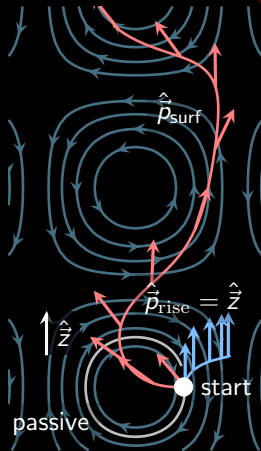


$\hat{\vec{z}}$

$$\vec{p}_{\text{surf}} = \left[ \exp\left( \tau \left( \vec{\nabla} \vec{u} \right) \right) \right]^T \hat{\vec{z}}.$$

▶ Johns Hopkins Turbulence
Databases: 3D Turbulence



Gudmundur Adalsteinsson.

▶ Sample **preferentially** the flow: **effective** swimming speed **x2**.

$\hat{\vec{p}}_{\text{surf}}$

$\vec{p}_{\text{rise}} = \hat{\vec{z}}$

$\hat{\vec{z}}$

start

passive