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IN BRIEF

BIOINSPIRED ROBOTICS

Boxfish keels

Boxfish, named because of their cuboid bodies, are covered in a hard shell with longitudinal ridges, called keels. Despite their rigid bodies, they are able to manoeuvre quickly and flexibly, making them ideal models to study for the design of underwater aquatic vessels, but the hydrodynamic role of the keels remains unclear. Now, Merel J. W. Van Gorp and colleagues use simulations to test a number of hypotheses about the role of keels. They compare boxfish models with keels to those with reduced keels and find that the keels do not substantially reduce drag or increase stability against pitch or yaw (vertical or lateral rotation). But for roll (longitudinal rotation), there is an increase in stability due to the keels.

ORIGINAL ARTICLE Van Gorp, M. J. W. et al. Keels of boxfish carapaces strongly improve stabilization against roll. *J. R. Soc. Interface* **19**, 20210942 (2022)