

Abstract Submitted  
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**Burst-and-coast dynamics in zebrafish and tetrafish.** BENJAMIN THIRIA, RAMIRO GODOY-DIANA, ESPCI, FREDERIC LECHENAULT, LPENS, BILL FRANCOIS, ESPCI, GEN LI, DMITRY KOLOMENSKIY, Japan Agency for Marine-Earth Science and Technology, PMMH/LPENS TEAM, PMMH/LPENS TEAM — Swimming kinematics of small fish such as zebrafish or tetrafish are characterized by intermittent sequences consisting in an “active” swimming phase directly followed by a passive “coast” phase. This work is an attempt to characterize those sequences using several archetypal model experiments and models gathering hydrodynamics, statistics and behavioral sciences. We will focus on new results obtained from real fish experiments in free swimming and forced-gait configurations (using a controlled swimming channel). We will show how the statistics of these S2D sequences evolve with the conditions of the experiment as external flow conditions size of the habitat the maturity state of the fish (larva, juvenile or adult). We believe that these results will have direct implications on the design and implementation of biomimetic robotic systems.

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