Centrale Méditerranée

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THÈSE DE DOCTORAT

Soutenue à Centrale Méditerranée
le 20 décembre 2022 par

Rémi MONTHILLER

A mechanistic approach to plankton migration

Discipline
Sciences pour l'ingénieur

Spécialité
Mécanique et Physique des fluides

École doctorale
ED 353 : Sciences pour l'ingénieur :
Mécanique, Physique, Micro et Nanoélectronique

Laboratoire/Partenaires de recherche
Aix Marseille Université
CNRS
Centrale Méditerranée
IRPHE
European Research Council

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I, undersigned, Rémi Monthiller, hereby declare that the work presented in this manuscript is my own work, carried out under the scientific direction of Christophe Eloy and Benjamin Favier, in accordance with the principles of honesty, integrity and responsibility inherent to the research mission. The research work and the writing of this manuscript have been carried out in compliance with both the french national charter for Research Integrity and the Aix-Marseille University charter on the fight against plagiarism.

This work has not been submitted previously either in this country or in aother country in the same or in a similar version to any other examination body.

Marseille, September 27, 2022

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List of publications and conferences presentations

List of published papers :

1. Monthiller, R., Loisy, A., Koehl, M. A., Favier, B., and Eloy, C. Surfing on turbulence : A strategy for planktonic navigation. Physical Review Letters, 129(6) :064502, 2022.

List of conference presentations :

1. ICTAM 2020+1 : 25th International Congress of Theoretical and Applied Mechanics, 22 to 27 August, 2021
2. Endowing Micro-swimmers with Artificial Intelligence, Online Workshop, October 6 and 7^{th}, 2021
3. 74th Annual Meeting of the American Physical Society Division of Fluid Dynamics, November 21 to 23, 2021
4. Réunion 2022 du GDR Navier-Stokes 2.00, 27 to 29 October, 2021
5. Microscale Ocean Biophysics 6.0, 22 to 27 May, 2022
6. Rencontre du Non-Linéaire, 29 to 31 March, 2022