

Active Carpets and Particle Aggregation

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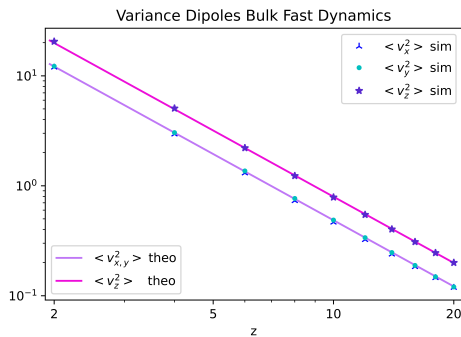
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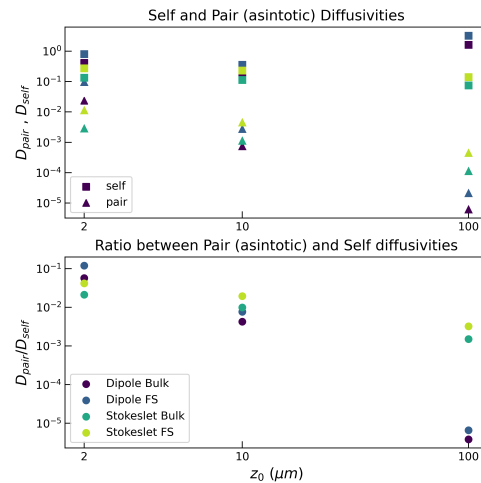
Introduction

Active physics has largely studied microswimmers in the low Reynolds regime. These actuators are physically characterized by the flow field they produce, *pushers* and *pullers* being the most common long-range cases. Due to the attraction to boundaries, these actuators can form *Active Carpets* which have an important role in the transport properties of their surroundings [1]. Previously, active carpets were studied near rigid walls and containing only *Stokeslet* actuators, being one of the aims of this work to extend this research to other types of surfaces and swimmers and also to investigate the active carpets role in the formation of aggregates. Particle aggregation is the process in which tiny passive tracers in water join together in a clump [2], determining essential properties in the water body.

Development



(a) Variances upon an Active Carpet



(b) Diffusivities upon an Active Carpet

Aknowledgments: Fondecyt Iniciación 11220683.

References

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- [2] Adrian B. Burd and George A. Jackson. Particle aggregation. *Annual review of marine science*, 1:65-90, 2009.