

Abstract Submitted
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Artificial Rheotaxis JEREMIE PALACCI, CSMR, NYU, STEFANO SACANNA, Dpt of Chemistry, NYU, ANAIS ABRAMIAN, KASEY HANSON, DAVID PINE, PAUL CHAIKIN, CSMR, NYU, CSMR, NYU TEAM — Self propelled colloids realize a controlled realization of an artificial bacterium. However living systems present a range of advanced properties such as the migration in gradients, or taxis, based on complex conformational change of proteins. For example, rheotaxis, the directed movement of an organism resulting from a fluid flow, has been reported notably for fish, e.g. salmon, or spermatozoa. Here, we present experimental observations of artificial rheotaxis, i.e. upstream migration of self propelled particles in the presence of a flow. We will present a simple model to account for this surprising effect. In the absence of biological component, this effect is intriguing and questions the ingredients at stake in the living matter.

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