

PHYSICAL MATHEMATICS SEMINAR

The importance of interfacial processes on microbial degradation of organic matter and crude oil in the ocean

GABRIEL JUAREZ

Massachusetts Institute of Technology

ABSTRACT:

Bacteria are the simplest organisms on Earth, yet they play an indispensable role in controlling the biogeochemistry and productivity of the oceans. These large-scale consequences result from the complex interactions between individual cells and their dynamic fluid and physical environments. In this talk, I will present experiments using microfluidics and time-lapse microscopy that directly visualize the interactions between marine bacteria and (i) model organic particles or (ii) crude oil droplets to extract critical parameters limiting these microbe mediated processes. These observations provide a new framework for understanding how the interplay between physical, chemical, and biological processes at interfaces shape the dynamics of microbial remineralization of sinking organic matter and biodegradation of crude oil in the ocean.

TUESDAY, MAY 19, 2015

2:30 PM

Building E18, Room 466A

*Reception following in Building E17, Room 401A
(Math Dept. Common Room)*

<http://math.mit.edu/pms/>



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