Meiji University Global COE Program

18th Mathematical Sciences based on Modeling, Analysis and Simulation seminar

Date : November 18, 2009, 16:30～17:30

Location : Meiji Univ. Ikuta Campus, Build 2 Annex A, Room A205

Nobuhiko J. Suematsu (Hiroshima Univ.)

Title : Localized Bioconvection of *Euglena* Caused by Phototaxis in the Lateral Direction

Abstract: A group of micro-organisms often generates a macroscopic ordered pattern such as a bacteria colony and bioconvection. The bioconvection is one of fluidic patterns caused by an upward swimming of the micro-organisms. The oriented swimming is induced in response to an external stimulus or force field, *e.g.*, a gradient in oxygen concentration, light illumination, and gravity. We focused on a swimming micro-organism exhibiting phototaxis, *Euglena*. In contrast to a general bioconvection appearing all over a chamber, *Euglena* formed a bioconvection in a part of a chamber. In this seminar, we would like to introduce to the characteristic behavior of bioconvection of *Euglena*, and discuss the mechanism of the pattern formation based on both experimental results and numerical calculation.

Everyone is welcome to attend the MAS seminar.

Meiji institute for Advanced Study of Mathematical Science (http://www.mims.meiji.ac.jp)

(Organizers: M. Mimura, D. Ueyama, Y. Wakano and K. Ikeda)

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Access: 10 minutes on foot from Ikuta St. Odakyu line,
Or 10 minutes by bus No. 13「明治大学正門前」, get off at the last stop.
See http://www.meiji.ac.jp/koho/campus_guide/ for details.