明治大学グローバルCOEプログラム【現象数理学の形成と発展】

第31回 MEE seminar

Mathematical Ecology & Evolution

2012年1月19日(木) 16：30〜17：30
明治大学生田キャンパス第二校舎A館: A305
January 19, 2012. 16:30〜17:30 Meiji Univ. Ikuta campus A305

小田急小田原線 「生田駅」から徒歩10分
又は「向ケ丘遊園」駅北口から「明治大学正門前」行きバスで15分終点下車
詳しくは、**http://www.meiji.ac.jp/koho/campus_guide/** をご覧下さい

Theoretical morphological study on gastropod shell forms

Koji Noshita (Kyushu Univ. Systems Life Sciences)

Abstract: Theoretical morphology is an approach with mathematical models that mimic organic forms, growing and morphogenetic process. Especially, a “morphospace” which is a set of parameterized biological forms is a helpful tool for understanding adaptation and evolution of organisms. However, in mathematical biology, there are few studies adopting the concept of the morphospace explicitly. Therefore, as a demonstration of theoretical morphological approaches, I would like to exhibit that a gastropod shell diversity of the coiling patterns and aperture inclination is described by a functional trade-off. Firstly, it was revealed that the postural stability depending on the gravity and the efficiency of shell construction that means a relative soft-body volume against the shell are important in terms of functional constraints on morphological diversity and uniformity. Biometric analysis showed that actual shell forms tend to occupy optimal regions of the morphospace, which allows the animals to achieve both stable postures and sufficient space for soft body. Moreover, I report there are difference of aperture inclination between habitats, and attempt to explain it by the drag of fluid.

参加自由です。皆様のお越しをお待ちしております。

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