

第30回 MEE seminar

Mathematical Ecology & Evolution

2011年6月16日(木) 16:30~17:30

明治大学生田キャンパス第二校舎A館：A207

June 16, 2011. 16:30~17:30 Meiji Univ. Ikuta campus A207

小田急小田原線 「生田駅」から徒歩10分
又は「向ヶ丘遊園」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/ をご覧ください

Dynamics of age-structured predator-prey models

Ryusuke Kon (Meiji University)

Abstract: Motivated by a classical problem of periodical cicadas, a certain age-structured predator-prey model is constructed. In this talk, I will show how the age-structured model can be analyzed. The mathematical analysis involves two steps. The first step is to derive a Lotka-Volterra equation from the age-structured model. The Lotka-Volterra equation appears as a limit of the original age-structured model. The second step is to analyze the derived Lotka-Volterra equation. Since Lotka-Volterra equations have been studied very well since Lotka (1925) and Volterra (1926), there are several useful theories. In fact, using a theory of average Liapunov functions, we can deal with the problem of permanence. We show that our Lotka-Volterra equation can be permanent if the life spans of two species are not coprime, while the equation cannot be permanent if the life spans are coprime.

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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