明治大学先端数理科学インスティテュート

第1回 現象数理セミナー'08

日時：2008年4月24日（木）16:30～17:30
場所：明治大学生田校舎・中央校舎6階・0605室（メディアゼミ室2）
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「明治大学正面」行きバスで10分終点下車
詳しくは，http://www.meiji.ac.jp/koho/campus_guide/ をご覧下さい

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Modeling lung branching morphogenesis

要旨：Lung branching morphogenesis has been extensively studied in developmental biology. Although numerous molecules has been shown to be involved in this process, how the interaction of these molecules result in branch structure is not well understood. On the other hand, abstract model for branching morphogenesis has been formulated in applied mathematics and its behavior is well understood. However, the model has not been utilized well in developmental biology. In this talk I will describe a simple in vitro experimental system which retain the key feature of lung branching morphogenesis. We established biologically realistic models which can reproduce the pattern formation in vitro, and experimentally verified the models. Both models could make experimentally testable predictions, and experimental results showed the validity of the models. Next, to extrapolate the result to in vivo situation, we used the chick lung as a experimental system because it generates both branch and cyst structure simultaneously during development. We made two experimentally testable hypothesis on cyst-branch difference from previous models, and experimentally verify them using fluorescently-labeled signaling molecules.

参加自由です。皆様のお越しをお待ちしております。

明治大学先端数理科学インスティテュート・現象数理部門（世話人：三村昌泰，上山大信，若野友一郎）