平成 19 年 11 月 7 日

応用物理学会北海道支部
会員各位

応用物理学会北海道支部

講演会のお知らせ

下記講演会を開催いたしますので、多数ご参加下さいますようご案内申し上げます。

演題：Network Modeling of Complex Systems
講師：Prof. Dean Korosak 氏
（CAMTP, University of Maribor, Slovenia）
日時：平成 19 年 11 月 21 日（水） 16:00～17:30
場所：北海道大学工学部応用物理学専攻会議室 （A3-62）
主催：応用物理学会北海道支部

講演の要旨

Complex network theory and its methods have recently attracted large attention accross several scientific disciplines as it was used to describe very diverse systems from the network perspective. Typical properties of the networks representing complex systems are distribution of connectivity with large components (hubs), strong inhomogeneity and non-trivial network dynamics.

Modeling the complex systems requires enough information about the constituents of the complex system and their interactions. Here we present the method to construct a complex network based on the analysis of digital binary image of the system. We will consider two examples of very different systems: the pore structure of soil, and the urban structure of a city. The properties of the constructed networks and statistical properties of images are first analyzed followed by the description of the algorithm to build a 2D image representing a network from a simple set of rules incorporating preferential attachment. In the last part of the talk we will also discuss the dynamical aspects of the network models, in particular the relationship between often observed anomalous transport and the structure of the complex system.

世話人 矢久保考介
北海道大学大学院工学研究科応用物理学専攻
電話：011-706-6621 yakubo@eng.hokudai.ac.jp