



# Meiji University Global COE Program 47<sup>th</sup> Mathematical Sciences based on



## Modeling, Analysis and Simulation seminar

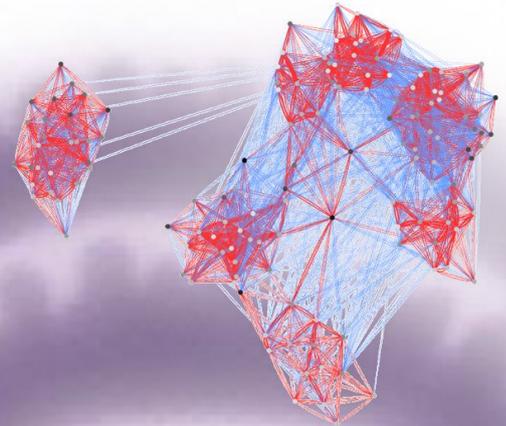
Date: November 2, 2011, 16:30~18:00

Location: Meiji Univ. Ikuta Campus, Build 2 Annex A, Room A306

**Naoki Masuda** (University of Tokyo)

**Title : Predictability of conversation partners.**

Abstract: Recent developments in sensing technologies have enabled us to examine the nature of human social behavior in greater detail. By applying an information-theoretic method, we examine the predictability in conversation events. The predictability in the sequence of one's conversation partners is defined as the degree to which one's next conversation partner can be predicted given the current partner. We quantify this predictability by using the mutual information. We examine the predictability of conversation events for each individual using the longitudinal data of face-to-face interactions collected from two company offices in Japan. Each subject wears a name tag equipped with an infrared sensor node, and conversation events are marked when signals are exchanged between sensor nodes in close proximity. We find that the conversation events are predictable to a certain extent. Much of the predictability is explained by longtailed distributions of interevent intervals. However, a predictability also exists in the data, apart from the contribution of their long-tailed nature. In addition, we show that an individual's predictability is correlated with the position of the individual in the static social network derived from the data. This work has been done in collaboration with Taro Takaguchi (Univ. Tokyo), Mitsuhiro Nakamura (Univ. Tokyo), Nobuo Sato (Hitachi), and Kazuo Yano (Hitachi).



**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, K. Ikeda and S.Kinoshita)

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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/](http://www.meiji.ac.jp/koho/campus_guide/) for details.