

# 第85回

附属社会創造数学センター主催

# 北大MMCセミナー

Date: 2018年6月18日(月) 16:30~18:00

※通常と曜日が異なります。

Speaker: Dinghua Xu,

(Zhejiang Sci-Tech University, Hangzhou & Shanghai  
University of Finance and Economics, China)

Place: 電子科学研究所 中央キャンパス総合研究棟2号館  
5F北側講義室(北12条西7丁目)

Title: Mathematical Modeling of Forward and Inverse Problems  
in Functional Clothing Design

## Abstract:

Textile material design is of paramount important in the study of functional clothing design. It is therefore important to reveal heat and moisture transfer characteristics in the system of human body-clothing-environment, which directly determine thermal comfort/safety level of human body. Based on the parabolic model of dynamic heat and moisture transfer with condensation in porous fabric under low temperature, we present inverse problems of textile parameters determination (IPTPD), including thickness, thermal conductivity and porosity determination. Moreover we mathematically formulate a new space-fractional parabolic model of heat transfer within thermal protective clothing under high environmental temperature, and the corresponding inverse problems of textile material design are put forward.



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