中央研究院統計科學研究所
學 術 演 講

講 題： Structure, Property, and Dynamics of Scientific Networks

演 講 人：Dr. Frederick Kin Hing Phoa（ 潘建興 研究員 ）

Institute of Statistical Science, Academia Sinica

時 間： 2024-11-4(Mon.) 10:30-11:00

地 點：Auditorium, B1F, Institute of Statistical Science；The tea reception will be held at 10:10.

備 註： Online live streaming through Cisco Webex will be available.

Abstract

A scientific network captures the interrelationships among entities involved in research activities, often constructed using large-scale databases such as the Web of Science, Scopus, and Semantic Scholar. While the former two are subscription-based, Semantic Scholar is freely accessible, and thus serves as the primary database for our work. We presently are engaged in over ten projects, both domestic and international, in this domain. This talk, however, focuses only on ongoing and upcoming collaborative efforts within the NBDA research group as requested. In specific, we explore three primary research topics: (1) network structure analysis using Betti numbers, with an emphasis on efficient computation through advanced machine learning techniques and applications to scientific networks; (2) entity diversity analysis within networks, examining its implications for scientific networks and ecological food webs; and (3) the dynamics of real-world networks, with a particular focus on the evolution of scientific networks. Finally, we present a projected research plan outlining key milestones for the upcoming year. These works are the joint works with Dr. Chen-Hsiang Yeang (co-PI), Dr. Wei-Chung Liu (co-PI), Ms. Tzu-Yin Chen (NTU doctoral student), Ms. Yi-Chun Chen (NTHU master student), and Mr. Wei-Chu Chiang (NBDA master-level RA).

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