

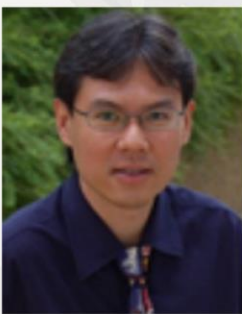
June 2016 Complexity Community Sharing Session

22 Jun 2016 Wed) 11:00am-01:00pm

Seminar Room 102

(opposite Learning Hub), Blk 1 Innovation Centre, Level 1
16 Nanyang Drive, Singapore 637722

Coupled Social-Ecological System: Self-Organized Criticality and Critical Transitions



A/Prof. Lock Yue CHEW

Coupled social-ecological systems typically involve a society of individuals exploiting and depending on the environmental ecological resources for their economic benefits. The Balinese subak system is an important canonical example of such a coupled human-nature system. The subaks are a distinct cultural system with a unique social and ecological dynamics based on theoretical modeling and empirical data analysis through statistical and nonlinear physics. I will first explain why the subaks self-organize their cropping schedule spontaneously to the observed pattern from satellite imageries and what has this to do with self-organized criticality. Then, I will demonstrate how the presence of social segregation in the subaks had led to new scenarios in critical transitions, and a unique additional regime that contains both elements of social cohesion and social disharmony, accounting for observations in real data.

Biography: Assoc Prof Lock Yue is with the School of Physical and Mathematical Sciences NTU. He obtained his Ph.D. degree in Theoretical Physics from National University of Singapore. Research interests wise, he is into the fundamental physical mechanisms and organization principles within complex systems and their dynamics, through the paradigm of statistical and nonlinear physics. His current research focus are: quantum-classical correspondence in the entanglement dynamics of coupled systems, statistical physics of alpha helix to beta-sheet transitions in protein folding, self-organization in dusty plasmas and BEC, and weak signal detection by an array of multiply coupled stochastic resonators.

Do Equity Analysts Learn from Their Colleagues? Evidence Using an Information Network Centrality Measure



Mr. Kenny CHUA

The Efficient Market Hypothesis – the foundational theory of modern finance – states that asset prices incorporate relevant information including public news, financial statements, management forecasts, media coverage, and macroeconomic indicators. Yet, we understand little how agents process, learn, and incorporate such relevant information. Our study analyzes how learning occurs in financial markets by studying equity analysts. Equity analysts are professional financial analysts who provide recommendations and financial forecasts (e.g., earnings, sales growth) of stocks. We hypothesize that analyst's ability to learn valuable information from her colleagues improves her ability to make more accurate forecasts. Using network theory, we model an analyst's propensity to benefit from information exchange within a brokerage. We hypothesize that if an analyst is better-positioned to learn from her colleagues, as measured by a higher centrality score, her information superiority will translate into better forecasting performance.

Biography:

Kenny PHUA is a 3rd year Finance Ph.D. candidate at Nanyang Business School (NBS). He holds a Bachelor of Business (First Class Honors) degree from NTU. Kenny is interested in the effect of management behavioral biases on corporate decisions. He is also interested in the role of network spillovers in finance and economics.