You are cordially invited to the 281st meeting as scheduled below.

Date: December 13th, 2013 (Fri) 15:00 –
Place: RERF Hijiyama Hall

Speaker: Young Min Kim, Ph.D.
Research Scientist
Department of Statistics, RERF

Title: “A Progressive Block Empirical Likelihood Method for Time Series”

Summary:

In this talk one develops a new blockwise empirical likelihood (BEL) method for stationary, weakly dependent time processes, called the progressive block empirical likelihood (PBEL). In contrast to the standard version of BEL, which uses data blocks of constant length for a given sample size and whose performance can depend crucially on the block length election, this new approach involves data blocking scheme where blocks increase in length by an arithmetic progression. Consequently, no block length selections are required for the PBEL method, which implies a certain type of robustness for this version of BEL. For inference of smooth functions of the process mean, theoretical results establish the chi-square limit of the log-likelihood ratio based on PBEL, which can be used to calibrate confidence regions. Using the same progressive block scheme, distributional extensions are also provided for other nonparametric likelihoods with time series in the family of Cressie-Read Discrepancies. Simulation evidence indicates that the PBEL method can perform comparably to the standard BEL in coverage accuracy (when the latter uses a “good” block choice) and can exhibit more stability, without the need to select a usual block length.