BOSTON UNIVERSITY

Boston University Statistics and Probability Seminar Series

Modeling of Hormone Secretion-Generating Mechanisms With Splines: A Pseudo-Likelihood Approach

Anna Liu
Department of Mathematics and Statistics
University o Massachussets,Amherst

Friday, December 7, 2007, 4:00-5:00pm
Mathematics and Computer Science (MCS) Building, Room 149
111 Cummington Street, Boston

Tea and Cookies at 3:30pm in MCS 153

Abstract: A flexible and robust approach is proposed for the investigation of underlying hormone secretion-generating mechanism. Characterizing hormone time series is a difficult task as most hormones are secreted in a pulsatile manner and pulses are often masked by the slow decay. We model hormone concentration as a filtered counting process where the intensity function of the counting process is modeled nonparametrically using periodic splines. The intensity function and parameters are estimated using a combination of weighted least squares and pseudo-likelihood based on the first two moments. Our method uses concentration measurements directly which avoids the difficult task of estimating pulse numbers and locations. Both simulations and applications suggest that our method performs well for estimating the intensity function of the pulse-generating counting processes.

Joint work with Professor Yuedong Wang, Department of Statistics and Applied Probability, University of California, Santa Barbara

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For directions and maps, please see *http://math.bu.edu/research/statistics/statseminar.html.*