Bibliography

Before listing Ching-Zong's publications, we give a brief introduction of their background and divide them broadly into five groups, in which the papers are referred to by their numbers in the subsequent list.

A. Least squares estimates in stochastic regression models

Ching-Zong's work in this area began with papers [1], [2] and [3], in which the strong consistency of least squares estimates is established in fixed-design linear regression models. In particular, when the errors are square integrable martingale differences, a necessary and sufficient condition for the strong consistency of least squares estimates is given. However, when the regressors are stochastic, this condition is too weak to ensure consistency. Paper [6] is devoted to resolving this difficulty, and establishes strong consistency and asymptotic normality of least squares estimates in stochastic regression models under mild assumptions on the stochastic regressors and errors. These results can be applied to interval estimation of the regression parameters and to recursive on-line identification and control schemes for linear dynamic systems, as shown in [6]. Papers [7], [12] and [15] extend the results of [6] and establish the asymptotic properties of least squares estimates in more general settings.

B. Adaptive control and stochastic approximation

Papers [17] and [18] resolve the dilemma between the control objective and the need of information for parameter estimation by occasional use of white-noise probing inputs and by a reparametrization of the model. Asymptotically efficient self-tuning regulators are constructed in [18] by making use of certain basic properties of adaptive predictors involving recursive least squares for the reparametrized model. Paper [16] studies excitation properties of the designs generated by adaptive control schemes. Instead of using least squares, [13] uses stochastic approximation for recursive estimation of the unknown parameters in adaptive control. Paper [20] introduces a multivariate version of adaptive stochastic approximation and demonstrates that it is asymptotically efficient from both the estimation and control points of view, while [28] uses martingale transforms with non-atomic limits to analyze stochastic approximation. Paper [23] introduces irreversibility constraints into the classical multi-armed bandit problem in adaptive control.

C. Nonstationary time series

For a general autoregressive (AR) process, [9] proves for the first time that the least squares estimate is strongly consistent regardless of whether the roots of the characteristic polynomial lie inside, on, or outside the unit disk. Paper [22] shows that in general unstable AR models, the limiting distribution of the least squares estimate can be characterized as a function of stochastic integrals. The techniques

developed in [22] and in the earlier paper [19] for deriving the asymptotic distribution soon became standard tools for analyzing unstable time series and led to many important developments in econometric time series, including recent advances in the analysis of cointegration processes.

D. Adaptive prediction and model selection

Paper [21] considers sequential prediction problems in stochastic regression models with martingale difference errors, and gives an asymptotic expression for the cumulative sum of squared prediction errors under mild conditions. Paper [27] shows that Rissanen's predictive least squares (PLS) criterion can be decomposed as a sum of two terms; one measures the goodness of fit and the other penalizes the complexity of the selected model. Using this decomposition, sufficient conditions for PLS to be strongly consistent in stochastic regression models are given, and the asymptotic equivalence between PLS and the Bayesian information criterion (BIC) is established. Moreover, a new criterion, FIC, is introduced and shown to share most asymptotic properties with PLS while removing some of the difficulties encountered by PLS in finite-sample situations. In [38], the first complete proof of an analogous property for Akaike's information criterion (AIC) in determining the order of a vector autoregressive model used to fit a weakly stationary time series is given, while in [41], AIC is shown to be asymptotically efficient for same-realization predictions. Closely related papers on model selection and adaptive prediction are [39], [42] and [43].

E. Probability theory, stochastic processes and other topics

In [4] and [5], sufficient conditions are given for the law of the iterated logarithm to hold for random subsequences, least squares estimates in linear regression models and partial sums of linear processes. Papers [8] and [14] provide sufficient conditions for a general linear process to be a convergence system, while [10] considers martingale difference sequences that satisfy a local Marcinkiewicz-Zygmund condition. Papers [24], [25] and [26] resolve long-standing estimation problems in branching processes with immigration. Paper [35] studies the asymptotic behavior of the residual empirical process in stochastic regression models. In [36], uniform convergence of sample second moments is established for families of time series arrays, whose modeling by multistep prediction or likelihood methods is considered in [40]. Paper [11], [29], [30] and [33] investigate moment inequalities and their statistical applications. Density estimation, mixtures, weak convergence of recursions and sequential analysis are considered in [31], [32], [34] and [37].

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