EXAMPLE PAPER FOR AISM SPECIAL ISSUE ON FRONTIER OF TIME SERIES MODELING

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Abstract. Abstract must be no more than 150 words in a single paragraph. The abstract should state results in such a way that the reader can evaluate their significance. References should not be cited in the abstract.

Key words and phrases: Key words or phrases, no more than 10, should be supplied.

1. Introduction

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2. Equations, Detfinition, Lemma and Theorem

2.1 *Example of Equations*

Consider a nonlinear non-Gaussian state space model for time series y_n,

$$x_n = F_n(x_{n-1}, v_n) \tag{2.1}$$

$$y_n = H_n(x_n, w_n), \tag{2.2}$$

where x_n is an unknown state vector, v_n and w_n are the system noise and the observation noise with densities $q_n(v)$ and $r_n(w)$, respectively.

2.2 *Examples of Definition and Remark*

Definition 2. 1 . A population π_i is considered as the best σ-qualified, if it simultaneously satisfies the following conditions:

(i) $\pi_i \in S$,

(ii) $\theta_i \geq \theta_0$ and

(iii) $\theta_i = \max_{\pi_j \in S} \theta_j$.

Remark 1 . You can write remark here.

2.3 *Examples of Lemma and Theorem*

LEMMA 2.3. 1 . *Let S_n be a random variable having a $\chi^2(n)$ distribution. Then we have $\cdots$.*

PROOF. Proof is not shown here.

THEOREM 2.3. 1 . *Assume $\sigma_i^2 \neq \sigma_0^2$, for all $i = 1, \ldots, k$. The empirical Bayes selection rule $d^{*n}(x)$, defined in* (3.7) *and* (3.8), *is asymptotically optimal with convergence rate of order $O(\ln^2 n/n)$. That is*

$$E_n[r(d^{*n})] - r(d^B) = O(\ln^2 n/n).$$

PROOF. Proof is not shown here.

3. Table and Figure

3.1 *Table*

Table 1. Table caption should be given here.

Order	AIC
1	35.4
2	21.6
3	13.4
4	11.6
5	12.2
6	13.8

3.2 *Figure*

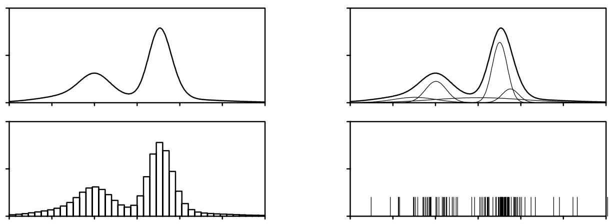

Fig. 1. Figure caption should be given here.

Fig. 2. Figure caption should be given here.

4. Conclusion

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Journal; Anscombe, F.J.(1967). Topics in the investigation of linear relations fitted by least squares, J. Roy. Statist. Soc. Ser. B,29,1-5.

Book; Feller, W.(1966). An Introduction to Probability Theory and Its Applications, Vol.2, Wiley, New York.

Edited book; Lin, S.P. and Perlman, M.D.(1985). A Monte Carlo comparison of four estimators for a covariance matrix, Multivarite Analysis (ed. P. R. Krishnaiah), 6,411-429, North Holland, Amsterdam.

Proceedings; James, W. and Stein, C.(1961). Estimation with quadratic loss, Proc. Fourth Berkeley Symp. on Math. Statist. Prob., Vol. 1, 361-380, Univ. of California Press, Berkeley.

References

Alspach, D. L. and Sorenson, H. W. (1972). Nonlinear Bayesian Estimation Using Gaussian Sum Approximations, *IEEE Trans. on Autom. Control*, **AC-17**, 439–448.

Anderson, B. D. O. and Moore, J. B. (1979). *Optimal Filtering*, Prentice-Hall, New Jersey.

Andrede Netto, M. L. Gimeno, L. and Mendes, M. J. (1978). On the optimal and suboptimal nonlinear filtering problem for discrete-time systems, *IEEE Trans. Automat. Control*, **23**, 1062–1067.

Kitagawa, G. and Gersch, W. (1996). *Smoothness Priors Analysis of Time Series*, Springer-Verlag, New York.

West, M., Harrison, P. J. and Migon, H. S. (1985). Dynamic generalized linear models and Bayesian forecasting (with discussion), *J. Amer. Statist. Assoc.*, **80**, 73–97.