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ANNOUNCEMENT OF NEW RESULTS

THRESHOLD MOVING AVERAGE MODEL

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Define a partition of real line  $R$  ( $R=S_1 \cup \dots \cup S_h$ ) by an ordered set of thresholds  $\{p_1, \dots, p_{h-1}\}$ ; further define  $n$  real functions  $b_k(\cdot)$  constant on each of subsets  $S_i$ ,  $i=1, \dots, h$ . Threshold moving average time series  $\{X_t\}$  is defined by

$$X_t = Y_t + \sum_{k=1}^n b_k(Y_{t-u_k}) Y_{t-k}, \quad t=\dots, -1, 0, 1, \dots$$

where  $u_k \in N$  and  $\{Y_t\}$  is the strict white noise.

The above model is studied from the point of view of stationarity, invertibility and estimation of parameters. Main results follow.

Stationarity. a) Let  $u_k=k$ ,  $k=1, \dots, n$ . Then  $\{X_t\}$  is stationary.

b) Let  $u_k=d$ ,  $d \in N$ ,  $k=1, \dots, n$ . Then  $\{X_t\}$  is stationary. Mean and autocovariance function are calculated for the mentioned model; for  $n=1$  and for the Gaussian white noise, the marginal density is obtained.

Invertibility. Let  $e_t$  be the error arisen from Granger-Andersen's procedure of estimation of white noise.

c) Let  $h=2$ ;  $p_1=0$ ;  $|b_k(y)| \leq \gamma_k$ ,  $y \in R$ ,  $k=1, \dots, n$  and  $\sum \gamma_k < 1$ . Then  $\lim_{t \rightarrow \infty} E|e_t| = 0$ .

d) Let  $|b_k(y)| \leq \gamma_k$ ,  $y \in R$ ,  $k=1, \dots, n$  and  $\sum \gamma_k < 1$ . Then there exists a real  $c$  such that  $\limsup_{t \rightarrow \infty} E|e_t| < c$ .

Estimation. For regular systems of densities, maximum likelihood estimators give consistent and asymptotically normal estimates of parameters.