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$$F_{t-1}??$$

$$\varepsilon_t\eta_th_t\varepsilon_t$$

$$\omega>0p>0q\geq 0\alpha\beta\alpha_i\geq 0,i=1,\ldots,p;\beta_j\geq 0,j=1,\ldots,q?$$

$$q=0p=q=0\sum_{i=1}^p\alpha_i<1(\infty)p=1,q=1?$$

$$\{X_t\}i)E(X_t^2)<\infty t\in Tii)E(X_t)cov(X_t,X_{t+s})ts\in Z,t\in T?$$

$$(p,q)E\left(\varepsilon_t\right)=0,Var\left(\varepsilon_t\right)=\omega(1-\sum_{i=1}^p\alpha_i-\sum_{j=1}^q\beta_j)^{-1}cov(Y_t,Y_s)=0t\neq s\sum_{i=1}^p\alpha_i+\sum_{j=1}^q\beta_j<1?$$

$$E(\varepsilon_t^4)<\infty 3\alpha_1^2+2\alpha_1\beta_1+\beta_1^2<1?$$

$$\theta=(\omega,\alpha_1,...,\alpha_p,\beta_1,...,\beta_q)$$

$$L(\theta)\theta\hat{\theta}$$

$$??$$

$$???$$

$$??|r_t|^d$$

$$\omega>0,\delta\geq 0,\alpha_i\geq 0,i=1,\ldots,p,-1<\gamma_i<1,i=1,\ldots,p,\beta_j\geq 0.j=1,\ldots,q\gamma\delta$$

$$\gamma_t$$