Model	ACF	PACF	Stationarity and Invertibility Conditions
ARMA(0,0)	$\rho_j = 0 \forall j$	$\phi_{jj} = 0 \forall j$	NA
AR(1)	$\rho_j = \phi_1^j, j = 1, 2, \cdots$	$\phi_{11} = \rho_1$, 0 otherwise	$-1 < \phi_1 < 1$
AR(2)	$\rho_1 = \frac{\phi_1}{1-\phi_2}$ $\rho_2 = \frac{\phi_1^2}{1-\phi_2} + \phi_2$ $\rho_j = \phi_1 \rho_{j-1} + \phi_2 \rho_{j-1}, j > 2$	$\phi_{11} = \rho_1$ $\phi_{22} = \frac{\rho_2 - \rho_1^2}{1 - \rho_1^2}$ $\phi_{jj} = 0, j > 2$	$\phi_1 + \phi_2 < 1,$ $\phi_2 - \phi_1 < 1,$ $\lvert\phi_2\rvert < 1$
MA(1)	$\rho_1 = \frac{-\theta_1}{1+\theta_1^2}$ $\rho_j = 0, j > 1$	$\phi_{11} = \rho_1$ $\phi_{jj} = \frac{-(\theta_1^j)(1-\theta_1^2)}{1-\theta_1^{2(j+1)}}, j \geq 1$	$-1 < \theta_1 < 1$
MA(2)	$\rho_1 = \frac{-\theta_1 + \theta_1\theta_2}{1+\theta_1^2+\theta_2^2}$ $\rho_2 = \frac{-\theta_2}{1+\theta_1^2+\theta_2^2}$ $\rho_j = 0, j > 2$	$\phi_{jj} = \frac{\rho_j - \sum_{k=1}^{j-1} \phi_{j-1,k} \rho_{j-k}}{1 - \sum_{k=1}^{j-1} \phi_{j-1,k} \rho_k}$ where $\phi_{jk} = \phi_{j-1,k} - \phi_{jj} \phi_{j-1,k-1}$ for $k = 1, 2, \cdots, j-1$	$\theta_1 + \theta_2 < 1,$ $\theta_2 - \theta_1 < 1,$ $\lvert\theta_2\rvert < 1$
ARMA(1,1)	$\rho_j = \frac{(1-\theta_1\phi_1)(\phi_1 - \theta_1)}{1 - 2\theta_1\phi_1 + \theta_1^2} \phi_1^{j-1},$ $j \geq 1$	$\phi_{jj} = \frac{\rho_j - \sum_{k=1}^{j-1} \phi_{j-1,k} \rho_{j-k}}{1 - \sum_{k=1}^{j-1} \phi_{j-1,k} \rho_k}$ where	$-1 < \phi_1 < 1,$ $-1 < \theta_1 < 1$

		$\phi_{jk} = \phi_{j-1,k} - \phi_{jj}\phi_{j-1,k-1}$ for $k = 1, 2, \cdots, j-1$	

Autocorrelation and Partial Autocorrelation Functions of Nonseasonal Models

Model	ACF	PACF
AR(p)	Tails off	Cuts off after lag p
MA(q)	Cuts off after lag q	Tails off
ARMA(p,q)	Tails off	Tails off