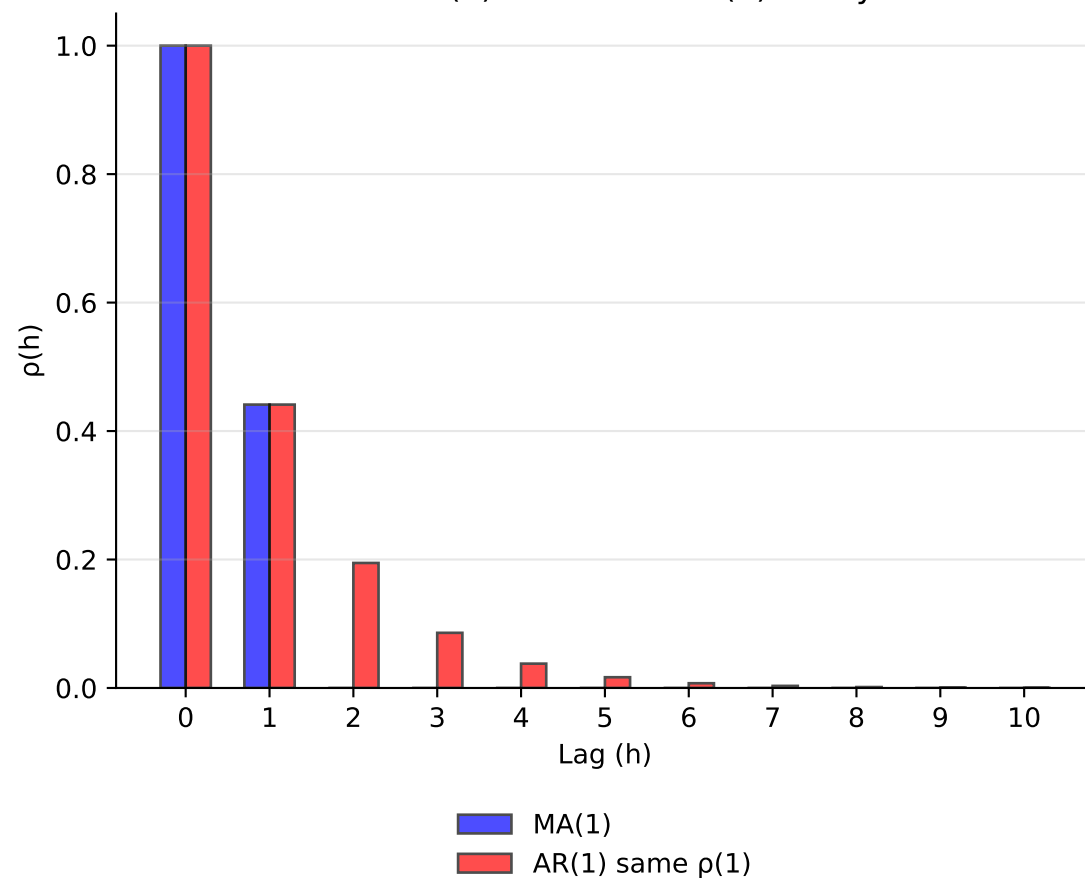
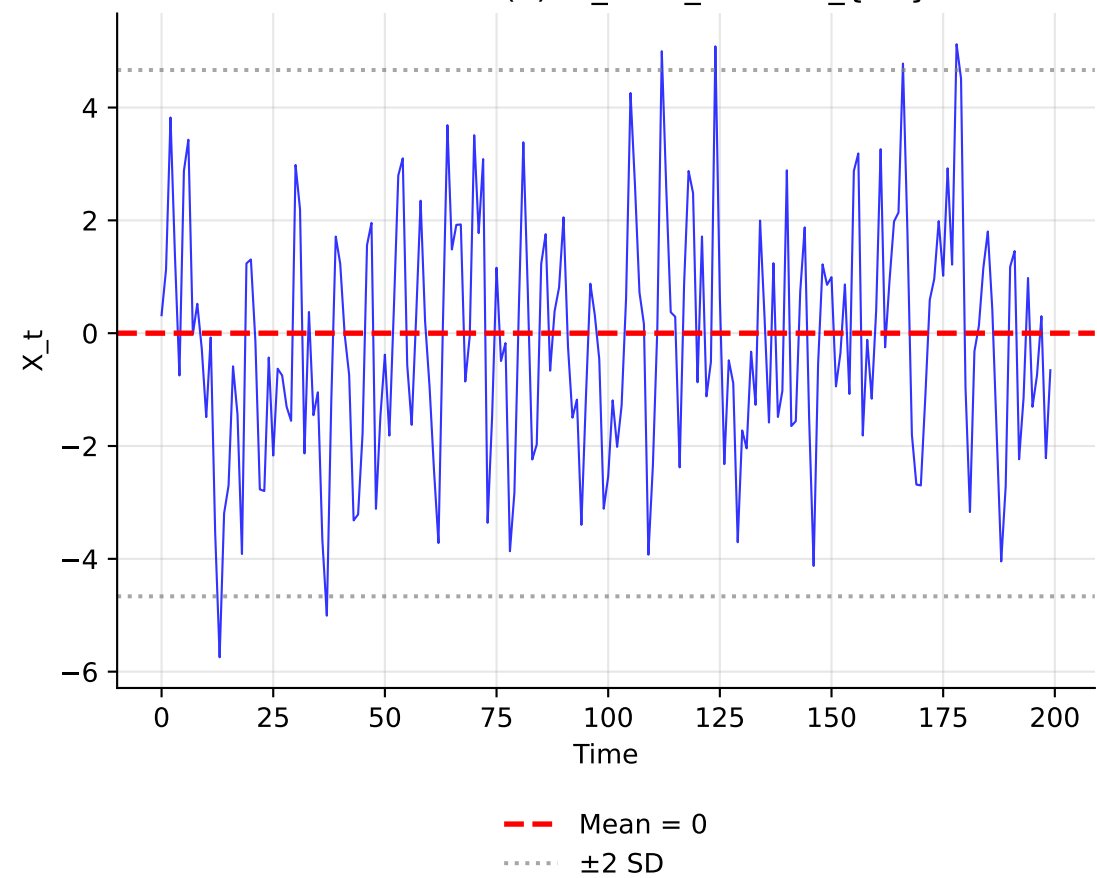
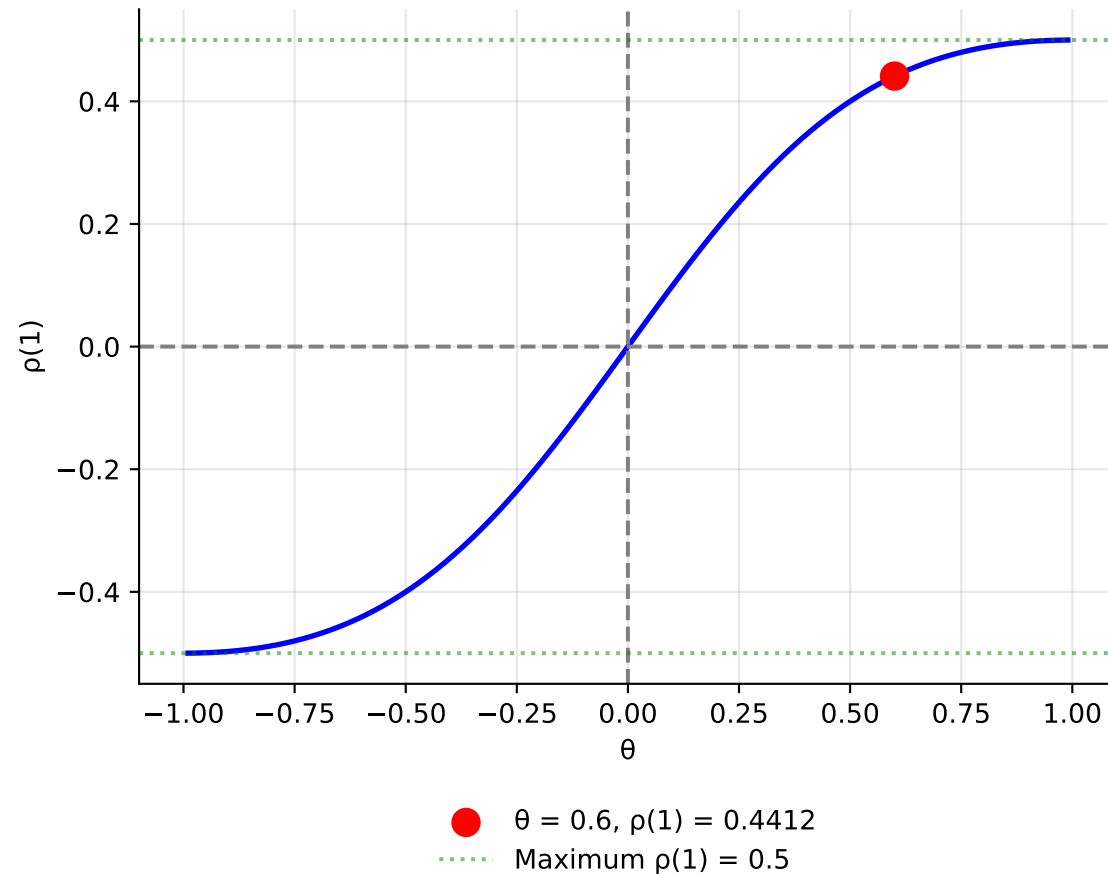


ACF: MA(1) cuts off vs AR(1) decays

Simulated MA(1): $X_t = \varepsilon_t + 0.6\varepsilon_{t-1}$ MA(1): $\rho(1) = \theta/(1+\theta^2)$ 

MA(1) Process Summary

Model: $X_t = \varepsilon_t + \theta\varepsilon_{t-1}$

Given: $\theta = 0.6$
 $\sigma^2 = 4$

Results:

$E[X_t] = 0$
 $\text{Var}(X_t) = \sigma^2(1 + \theta^2) = 5.44$
 $\gamma(1) = \theta\sigma^2 = 2.4$
 $\rho(1) = \theta/(1+\theta^2) = 0.4412$
 $\rho(2) = 0$ (and $\rho(h) = 0$ for $h > 1$)

Key Feature:

ACF CUTS OFF at lag 1!
 This identifies MA(1) vs AR processes.

Invertibility: $|\theta| < 1$ required