



Signature d'un ARMA

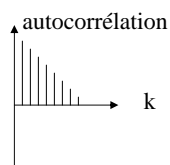
Les processus AR et MA ont des **autocorrélogrammes** simples et partiels qui sont **spécifiques** à chacun.

L'ordre du processus se lit aussi sur les autocorrélogrammes.

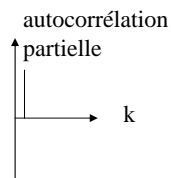
Note : on n'étudie généralement que jusqu'à l'ordre $k = N/4$



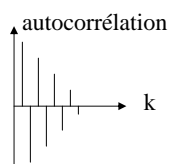
Processus AR(1)



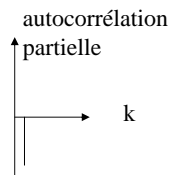
AR(1)



$Z(t) = \varphi * Z(t-1) + U(t)$
avec $\varphi > 0$



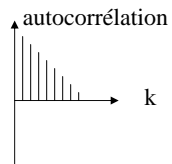
AR(1)



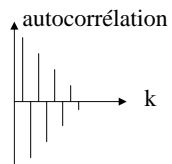
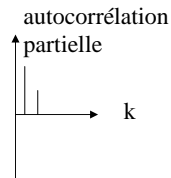
$Z(t) = \varphi * Z(t-1) + U(t)$
avec $\varphi < 0$



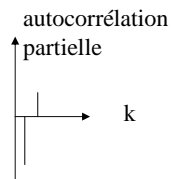
Processus AR(2) (1/2)



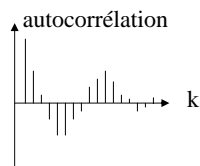
AR(2)



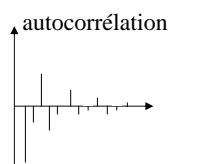
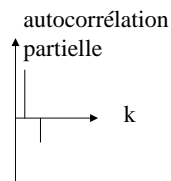
AR(2)



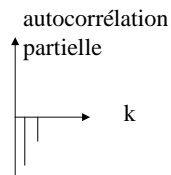
Processus AR(2) (2/2)



AR(2)

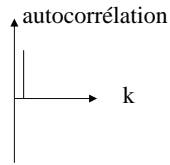


AR(2)

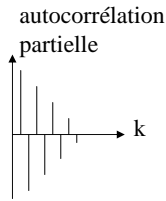




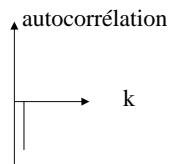
Processus MA(1)



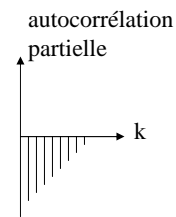
MA(1)



$Z(t) = \theta * U(t-1) + U(t)$
avec $\theta > 0$



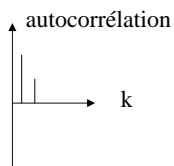
MA(1)



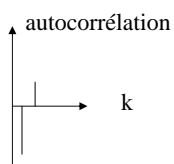
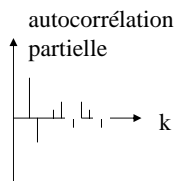
$Z(t) = \theta * U(t-1) + U(t)$
avec $\theta < 0$



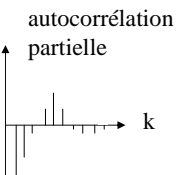
Processus MA(2) (1/2)



MA(2)

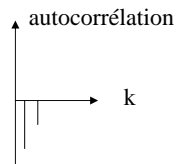


MA(2)

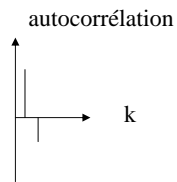
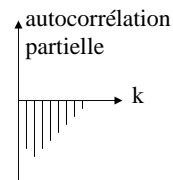




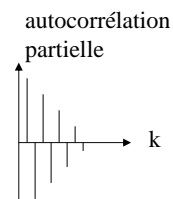
Processus MA(2) (2/2)



MA(2)



MA(2)



En résumé

Processus	Autocorrélogramme	Autocorrélogramme partiel
AR(1)	Décroissance exponentielle (éventuelle alternance des signes)	Pic unique à $k=1$
AR(2)	Décroissance exponentielle et sinusoïde amortie	Pics uniques à $k=1$ et $k=2$
MA(1)	Pic unique à $k=1$	Décroissance exponentielle (éventuelle alternance des signes)
MA(2)	Pics uniques à $k=1$ et $k=2$	Décroissance exponentielle et sinusoïde amortie
ARMA(1,1)	Décroissance exponentielle	Décroissance exponentielle