Графики к lec 08

Boris Demeshev

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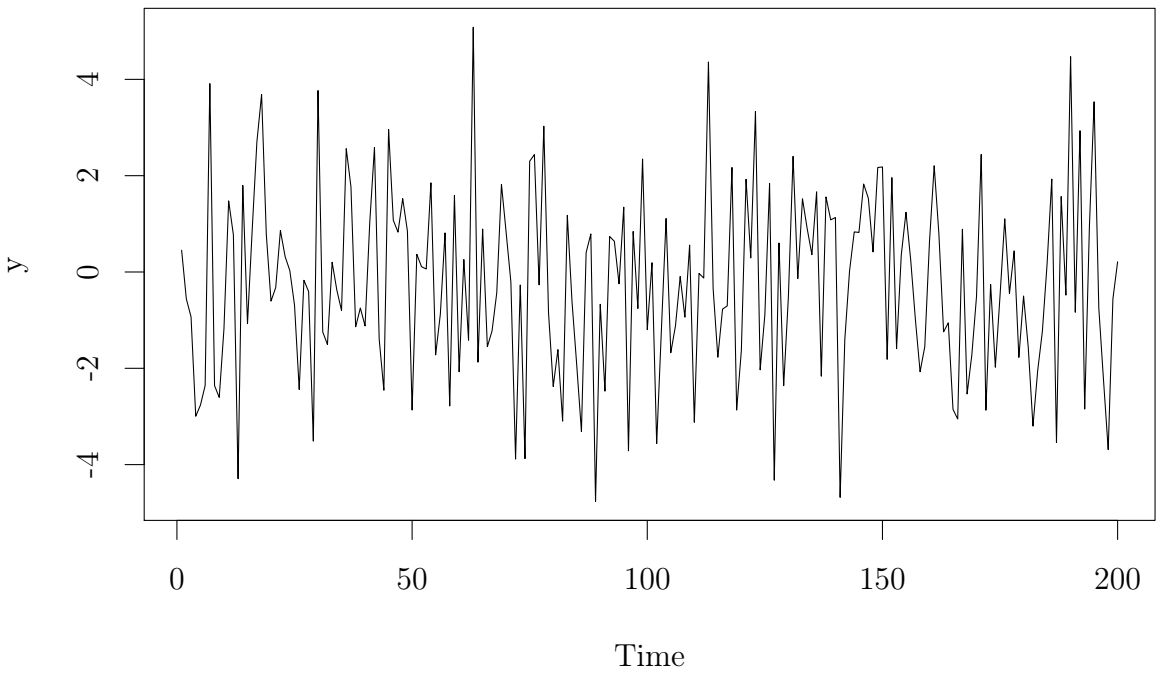
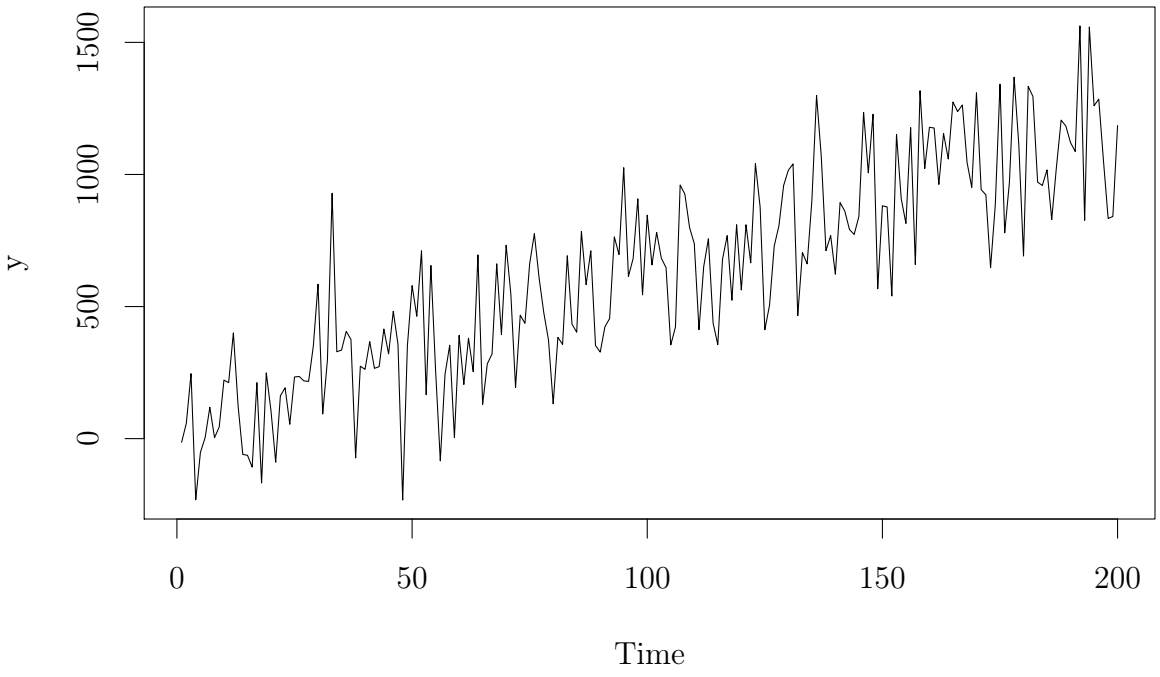
Год	Население (тыс. чел.)	ВВП (млрд. руб.)
2002	145649	10830
2003	144964	13208
2004	144168	17027
2005	143474	21610
2006	142754	26917
2007	142220	33248
2008	141980	41277
2009	141900	38807
2010	142962	46308
2011	142914	55967
2012	143103	62176
2013	143395	66190

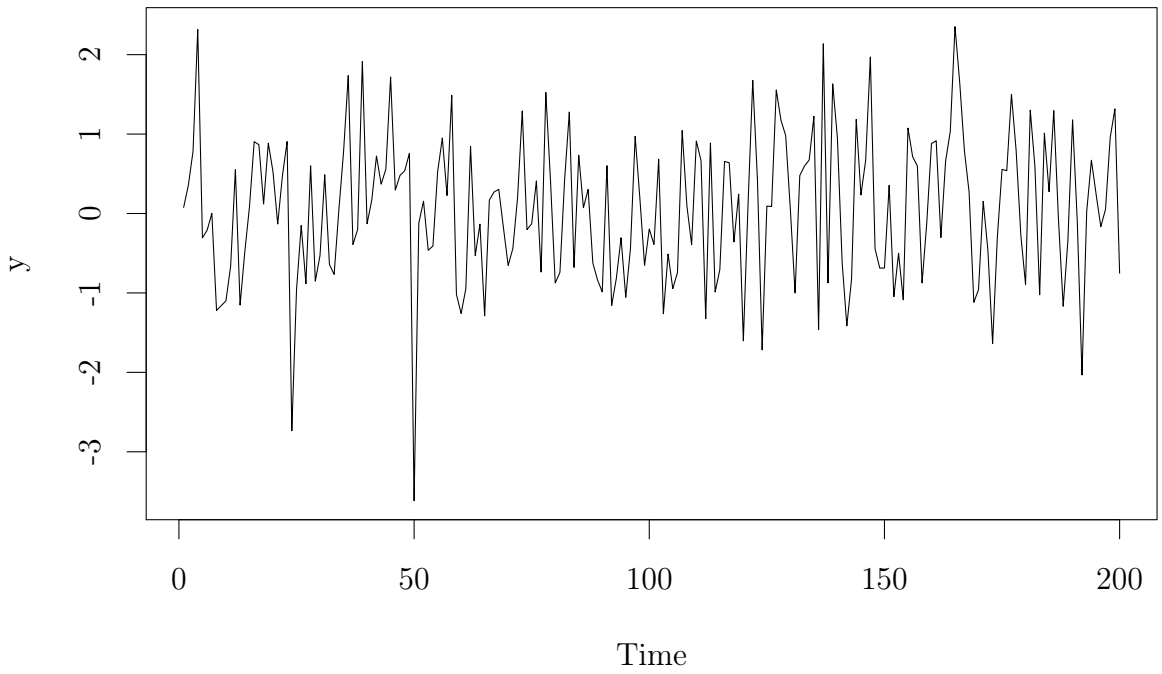
Белый шум, $y_t = \varepsilon_t \sim N(0, 4)$



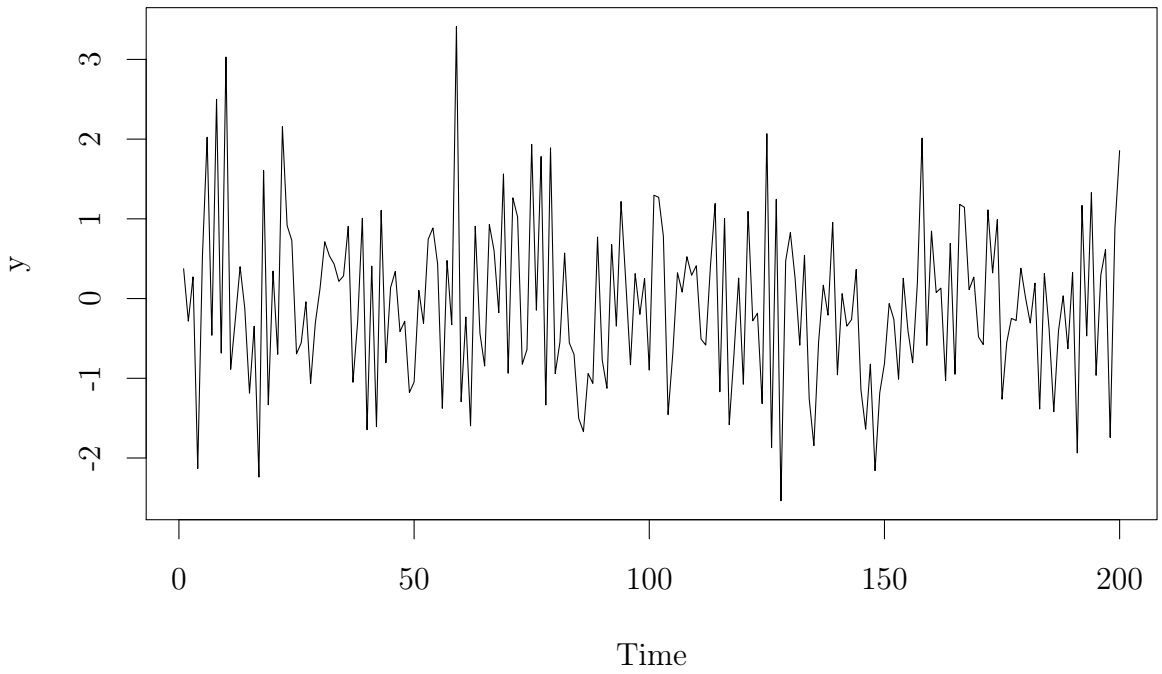
Процесс с трендом, $y_t = 5 + 6t + \varepsilon_t$**,** $\varepsilon_t \sim N(0, 200^2)$



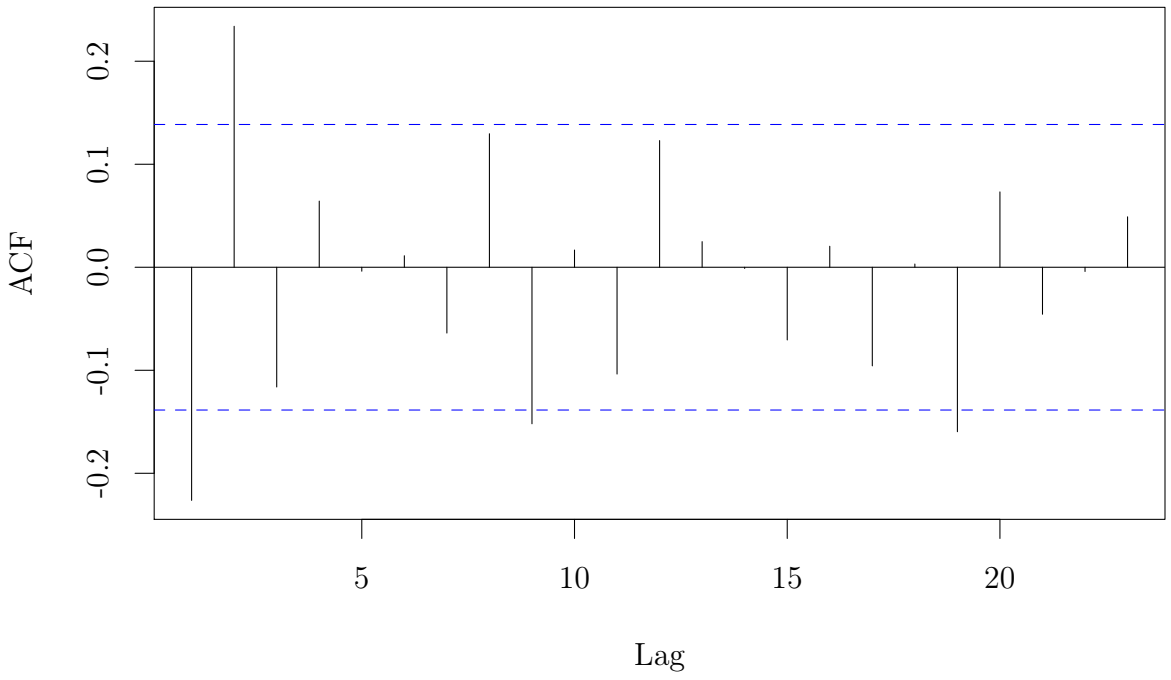
Случайное блуждание, $y_t = y_{t-1} + 2 + \varepsilon_t$



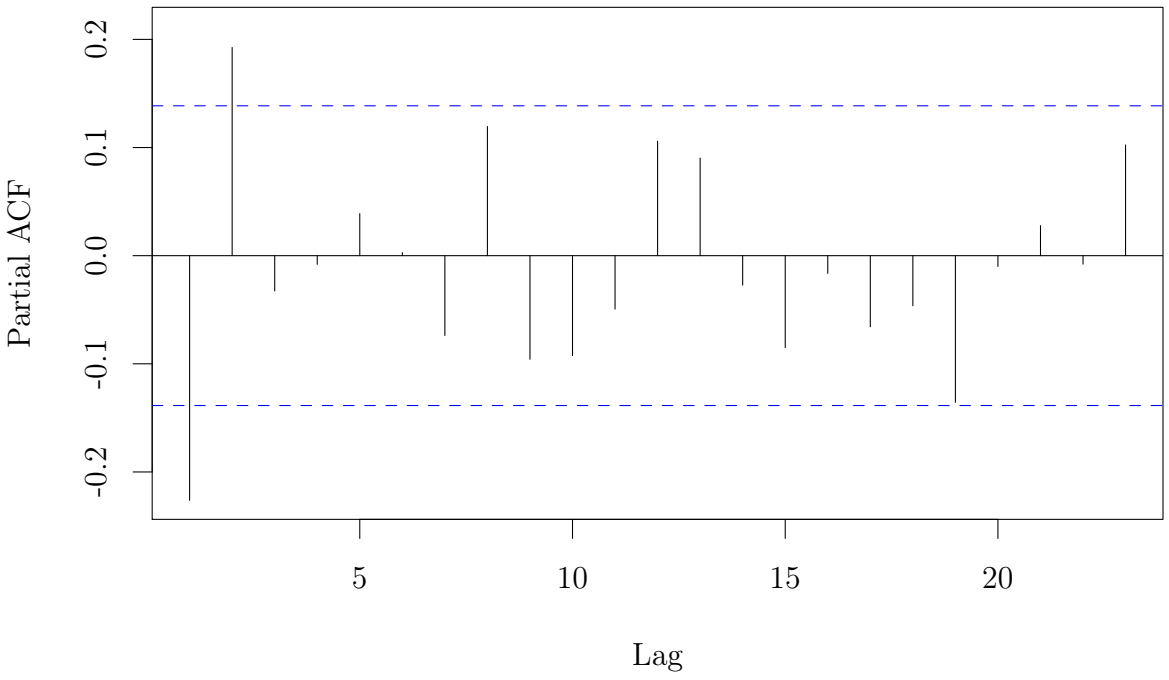
Белый шум, $y_t = \varepsilon_t$



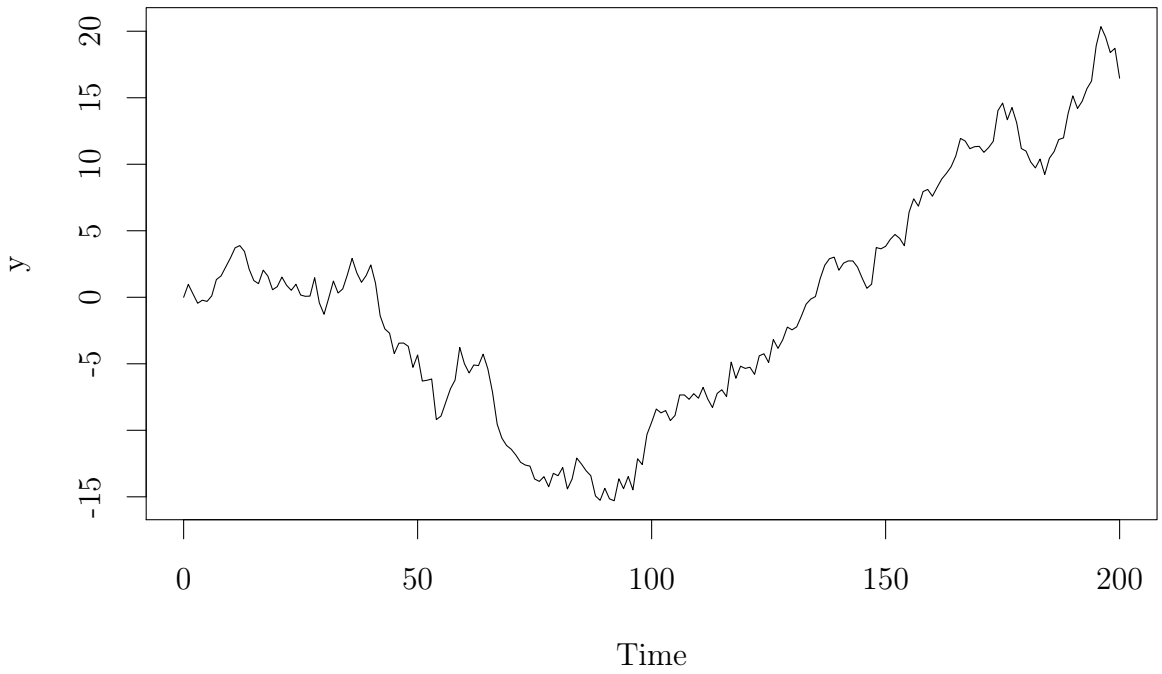
ACF, $y_t = \varepsilon_t$



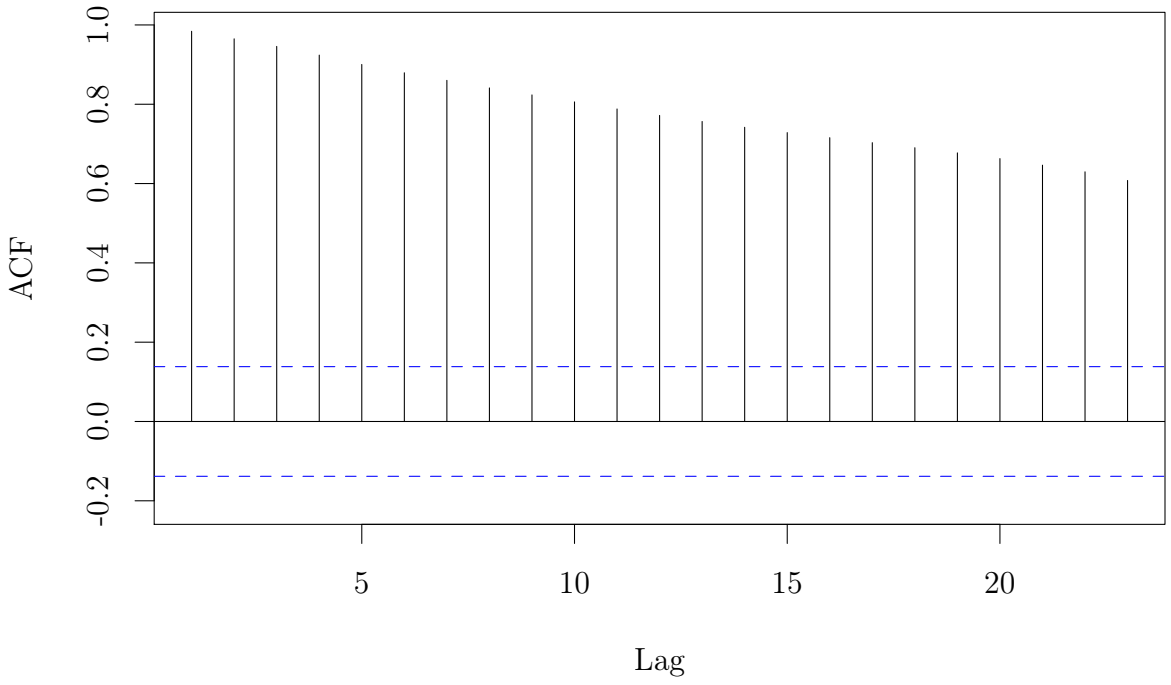
PACF, $y_t = \varepsilon_t$



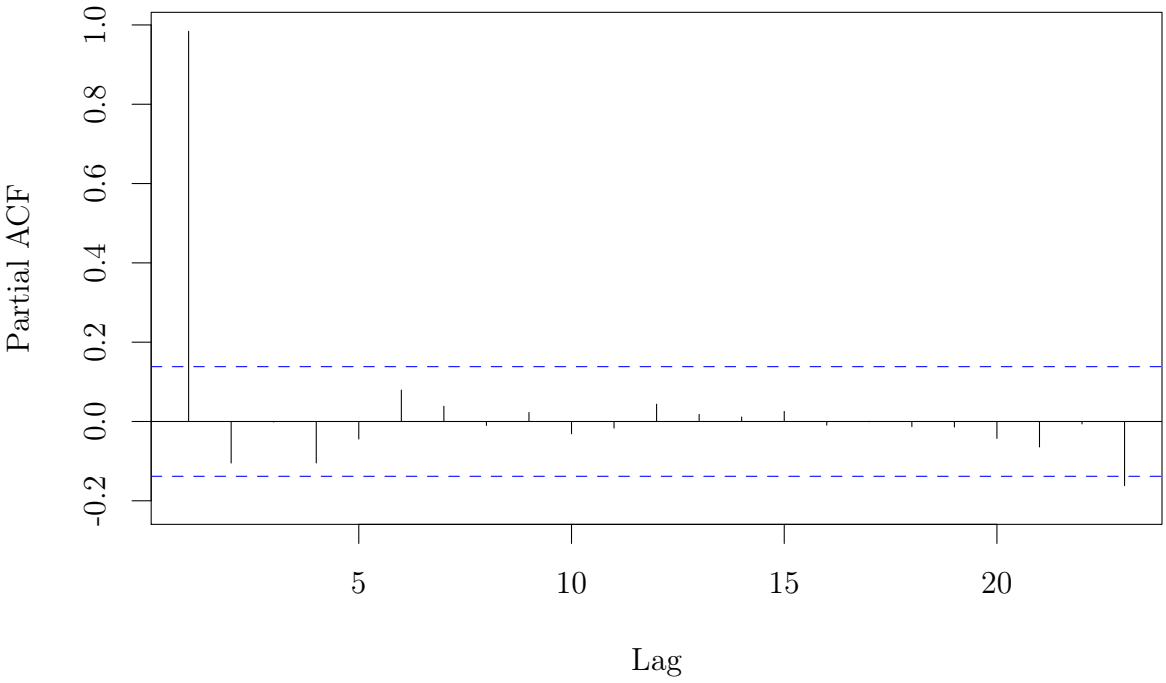
Случайное блуждание, $y_t = y_{t-1} + \varepsilon_t$



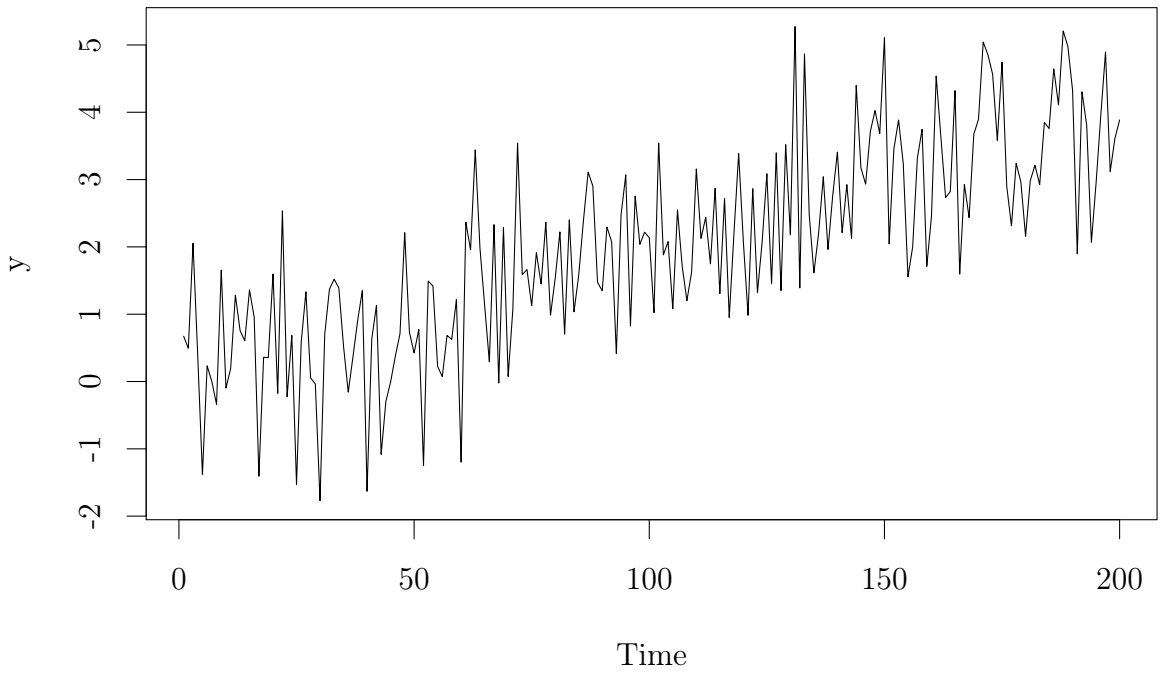
ACF, $y_t = y_{t-1} + \varepsilon_t$



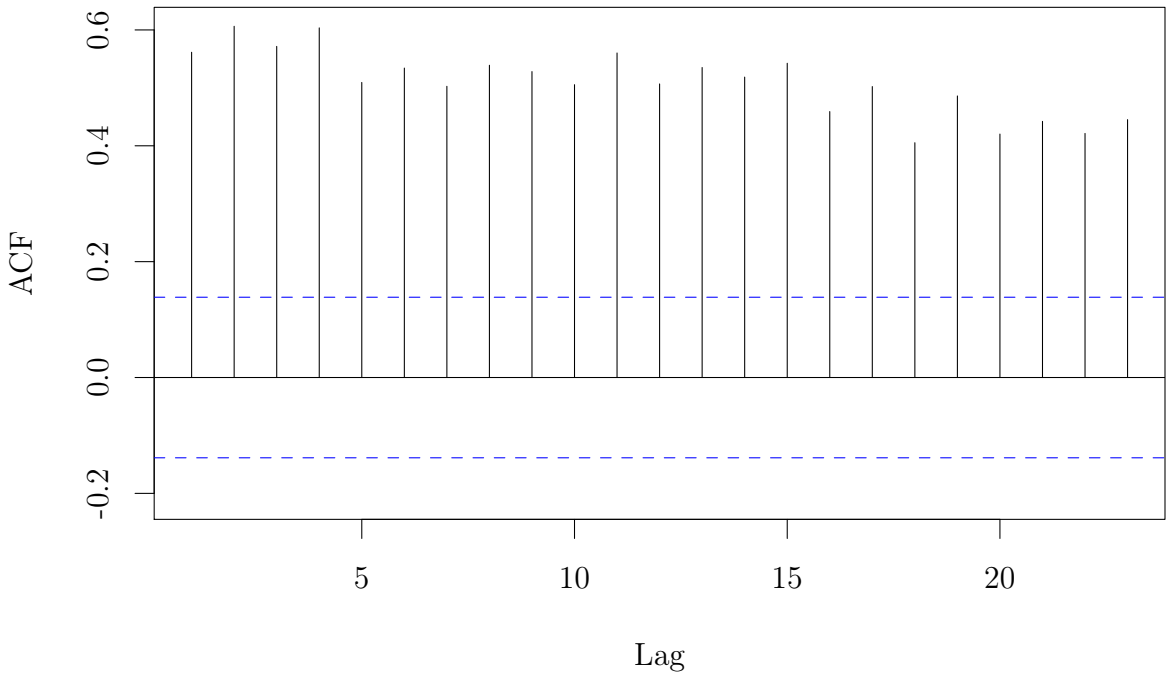
PACF, $y_t = y_{t-1} + \varepsilon_t$



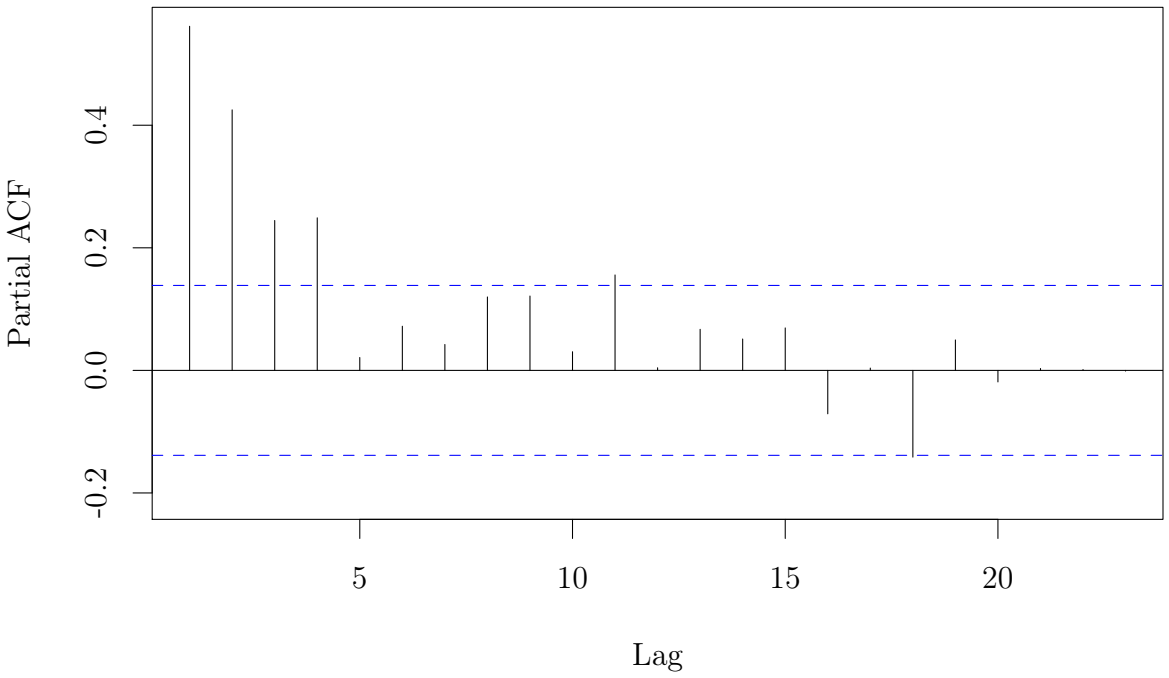
Процесс с трендом, $y_t = 0.02 \cdot t + \varepsilon_t$



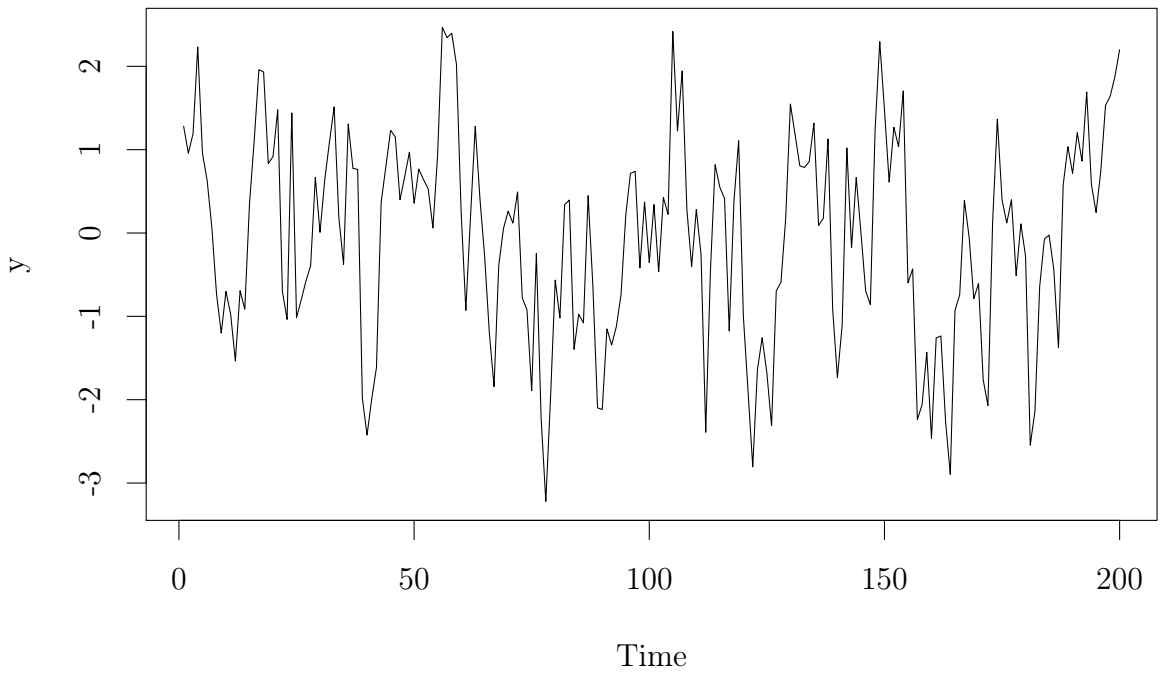
ACF, $y_t = 0.02 \cdot t + \varepsilon_t$



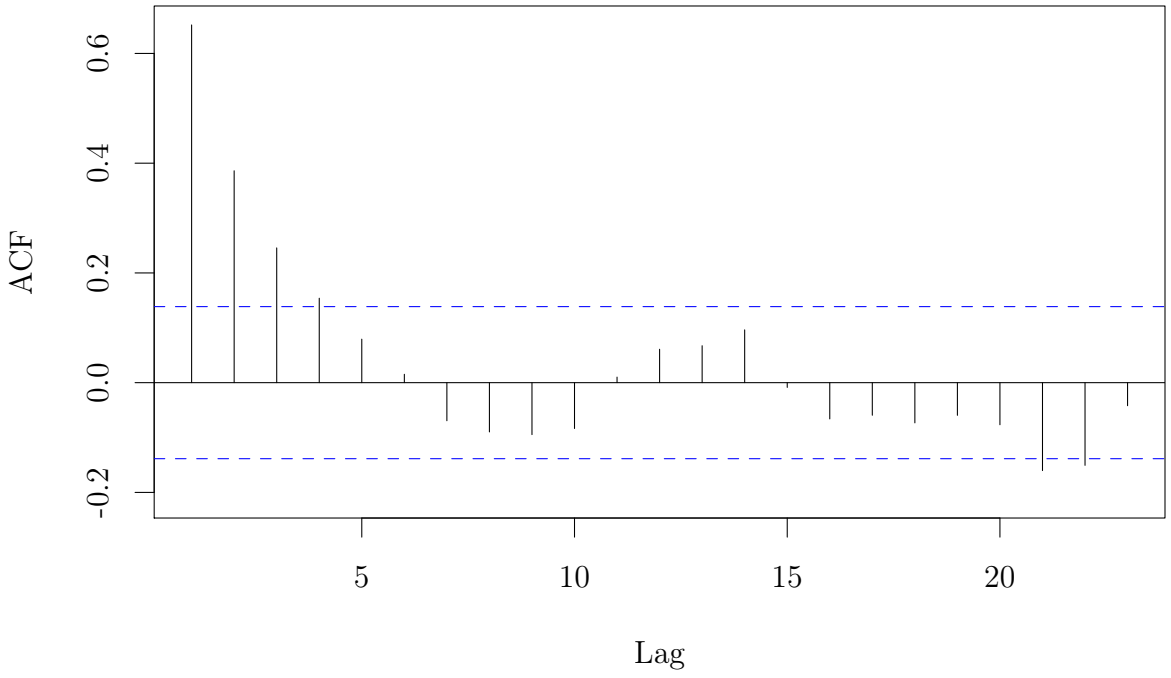
PACF, $y_t = 0.02 \cdot t + \varepsilon_t$

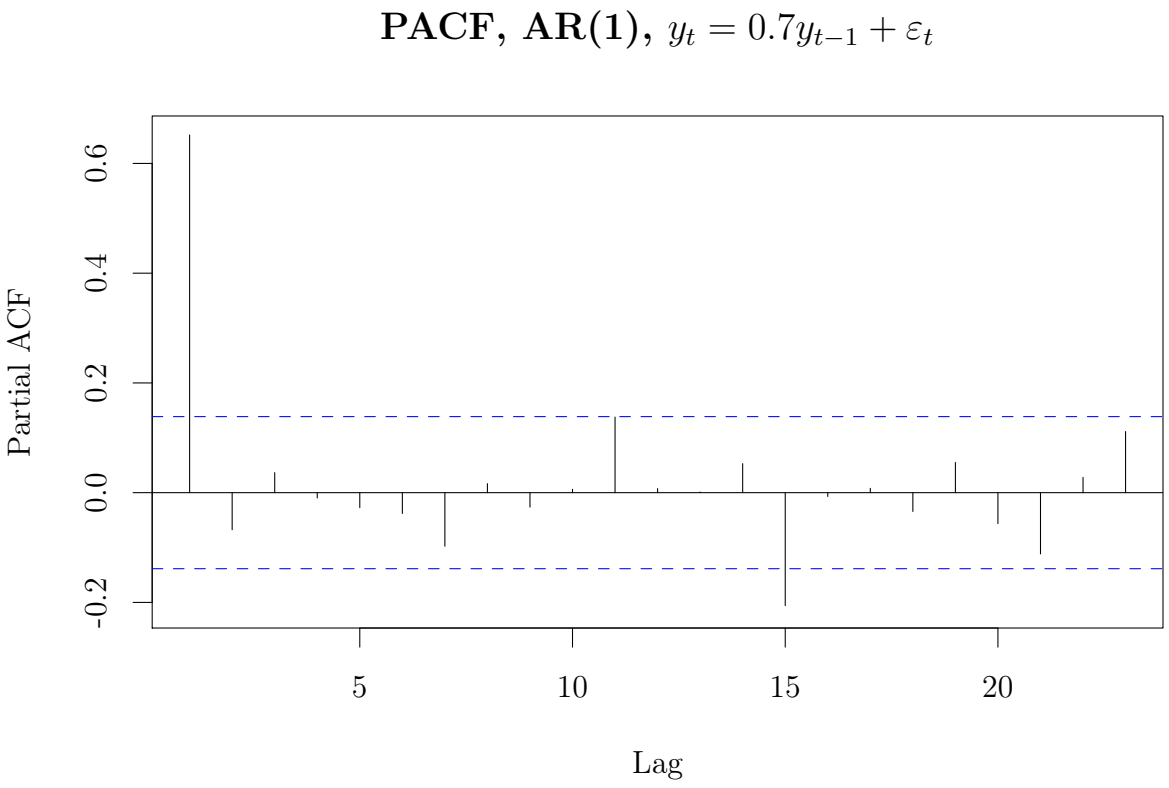


AR(1), $y_t = 0.7y_{t-1} + \varepsilon_t$

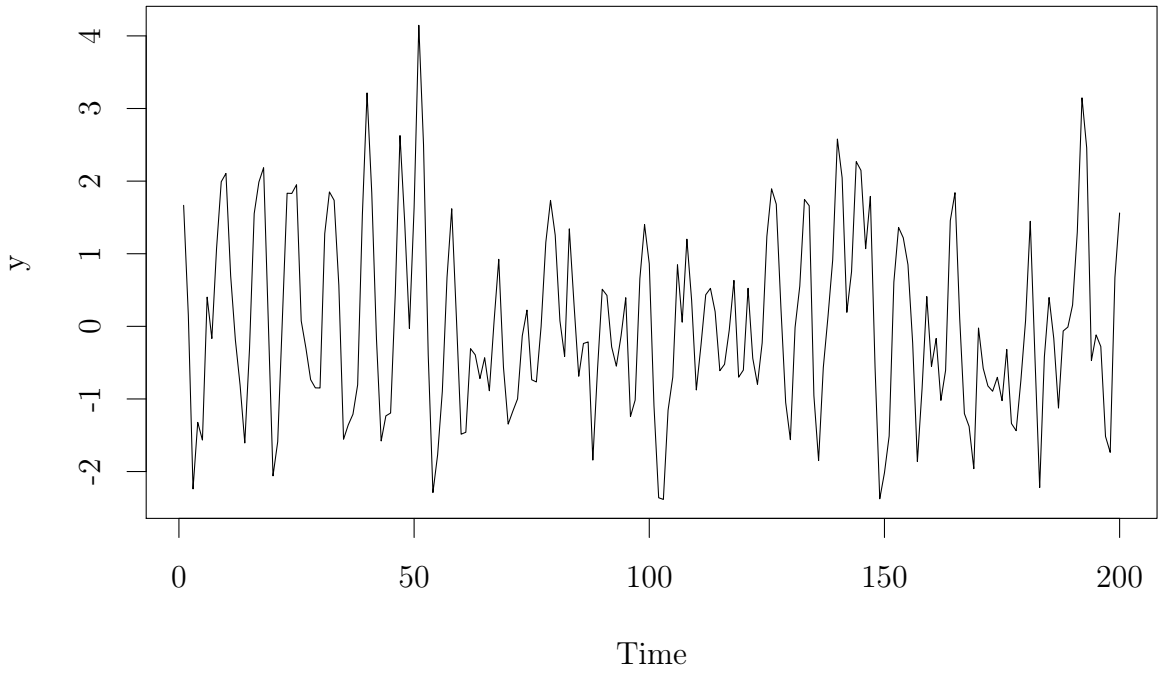


ACF, AR(1), $y_t = 0.7y_{t-1} + \varepsilon_t$

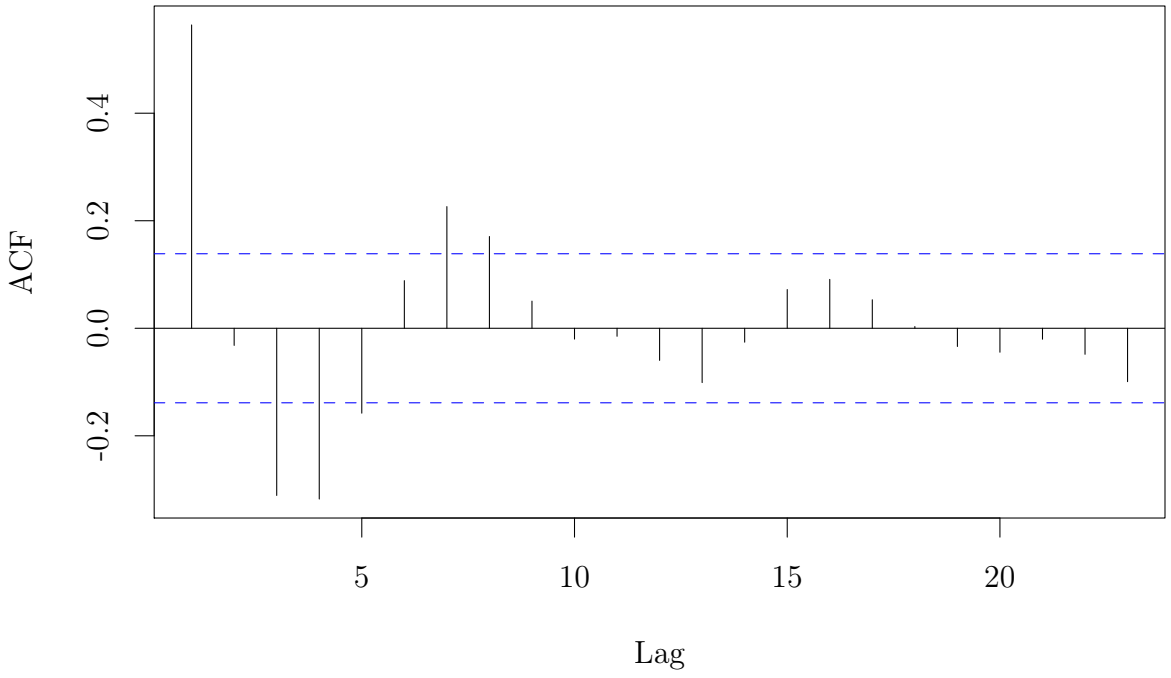



PACF, AR(1), $y_t = 0.7y_{t-1} + \varepsilon_t$
Partial ACF
0.6
0.4
0.2
0.0
-0.2
5
10
15
20
Lag

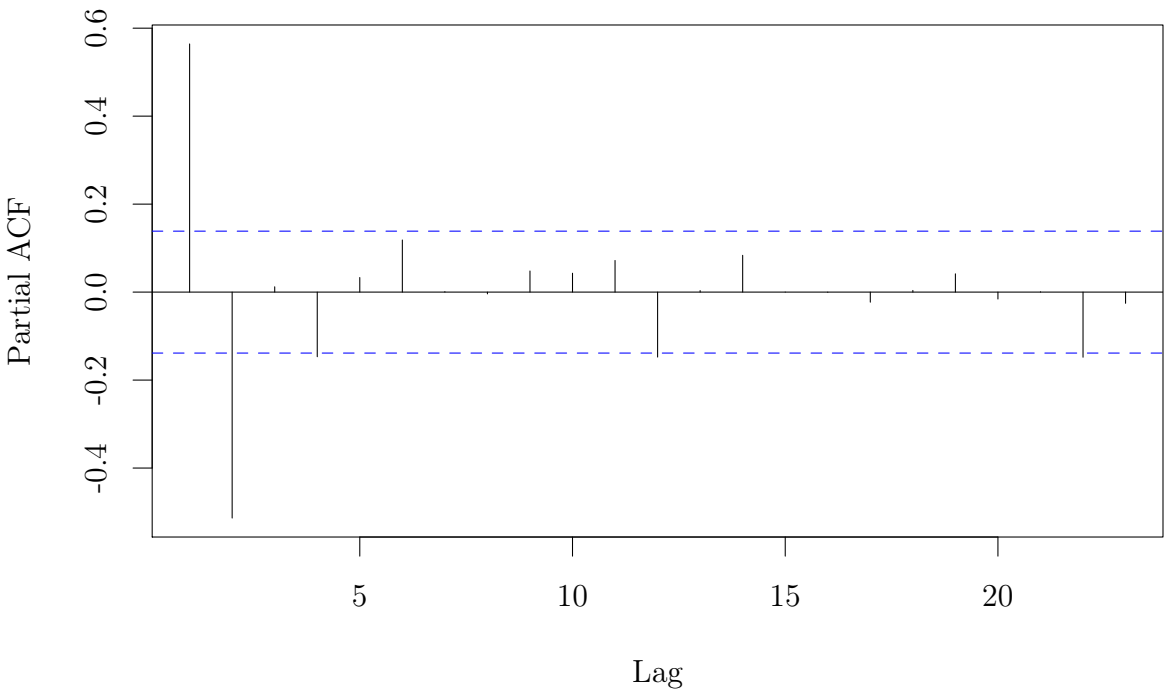
AR(2), $y_t = 0.9y_{t-1} - 0.5y_{t-2} + \varepsilon_t$



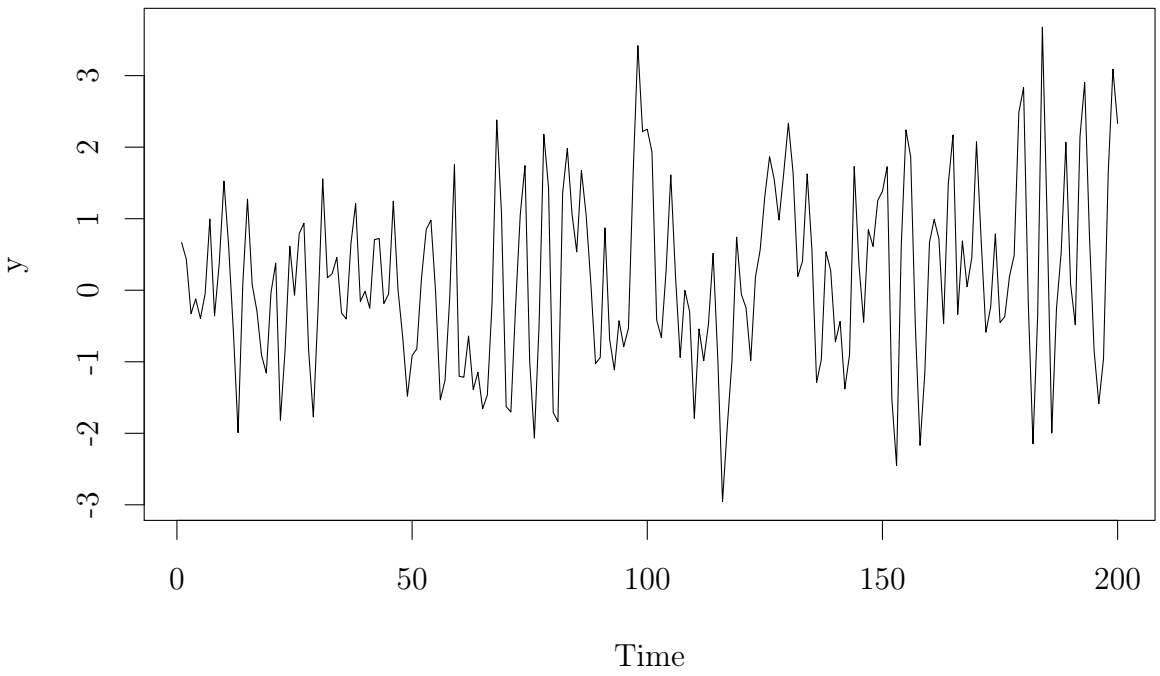
ACF, AR(2), $y_t = 0.9y_{t-1} - 0.5y_{t-2} + \varepsilon_t$



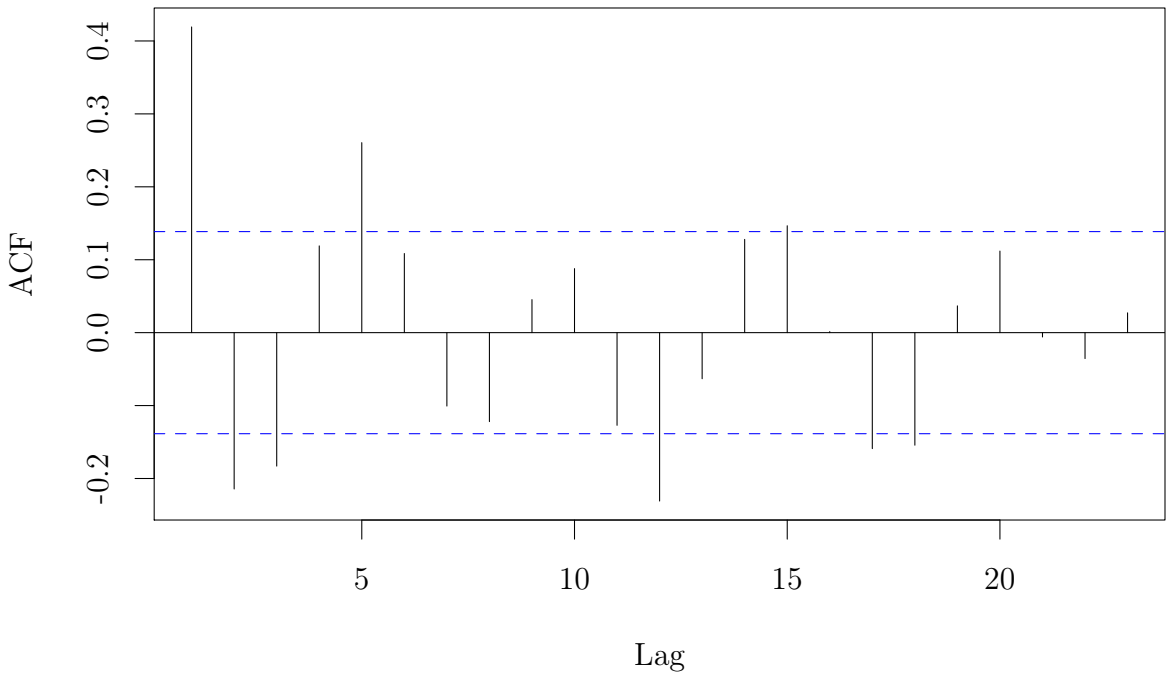
PACF, AR(2), $y_t = 0.9y_{t-1} - 0.5y_{t-2} + \varepsilon_t$



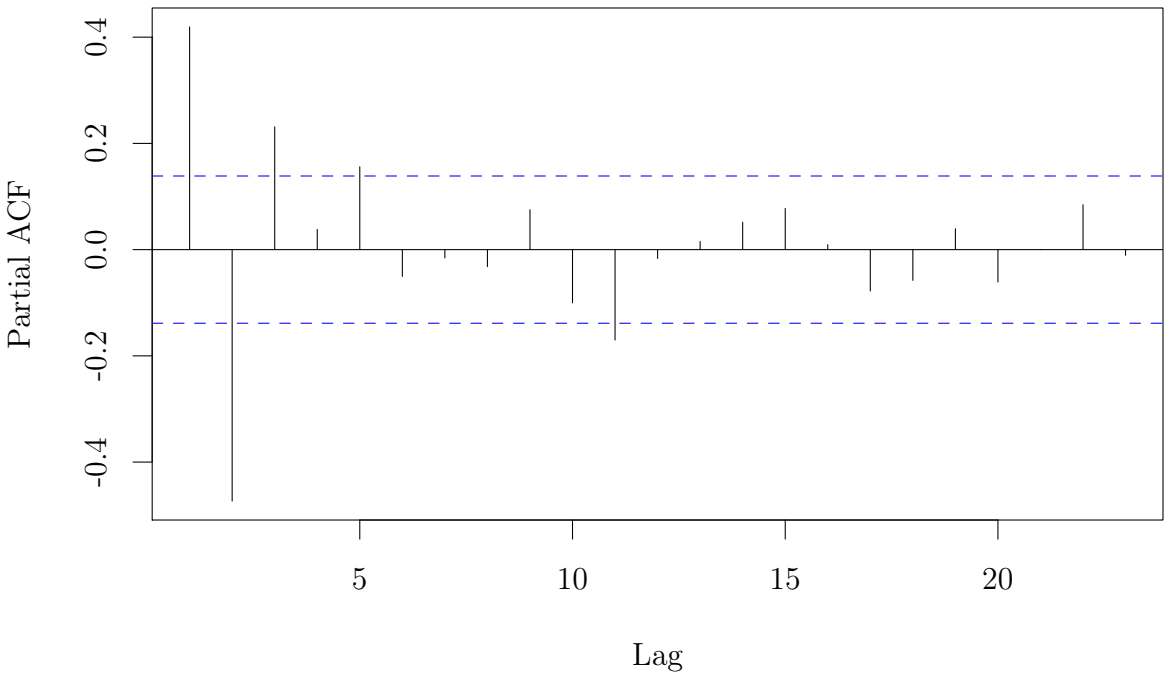
MA(1), $y_t = 0.7\varepsilon_{t-1} + \varepsilon_t$



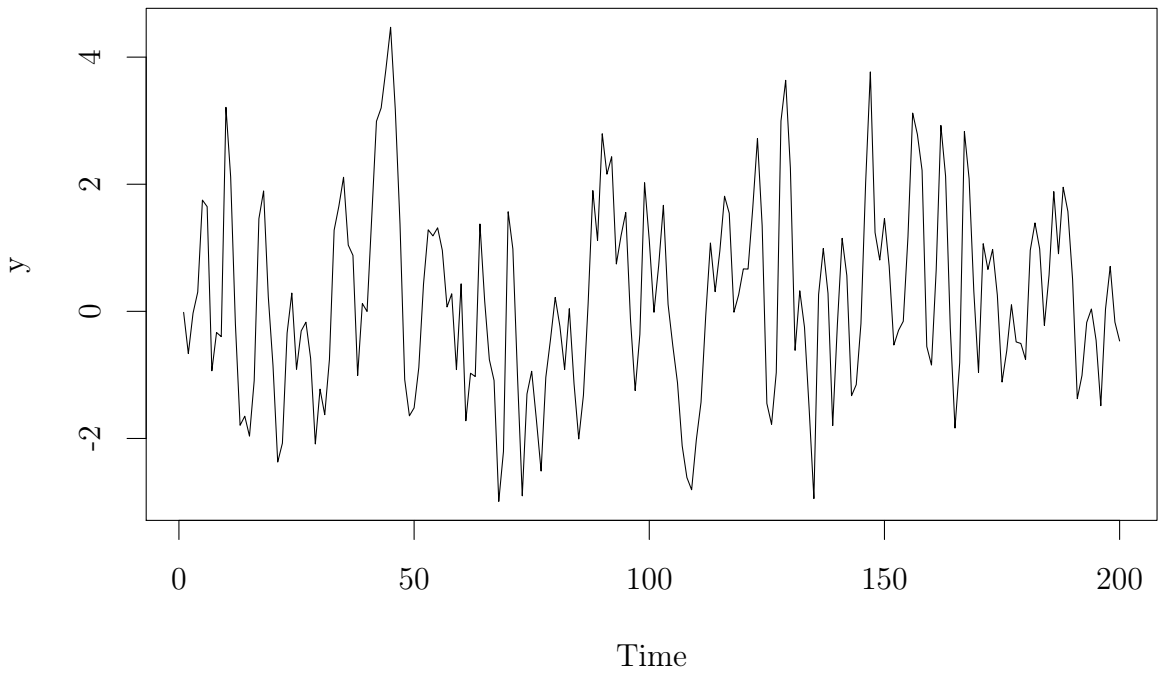
ACF, MA(1), $y_t = 0.7\varepsilon_{t-1} + \varepsilon_t$



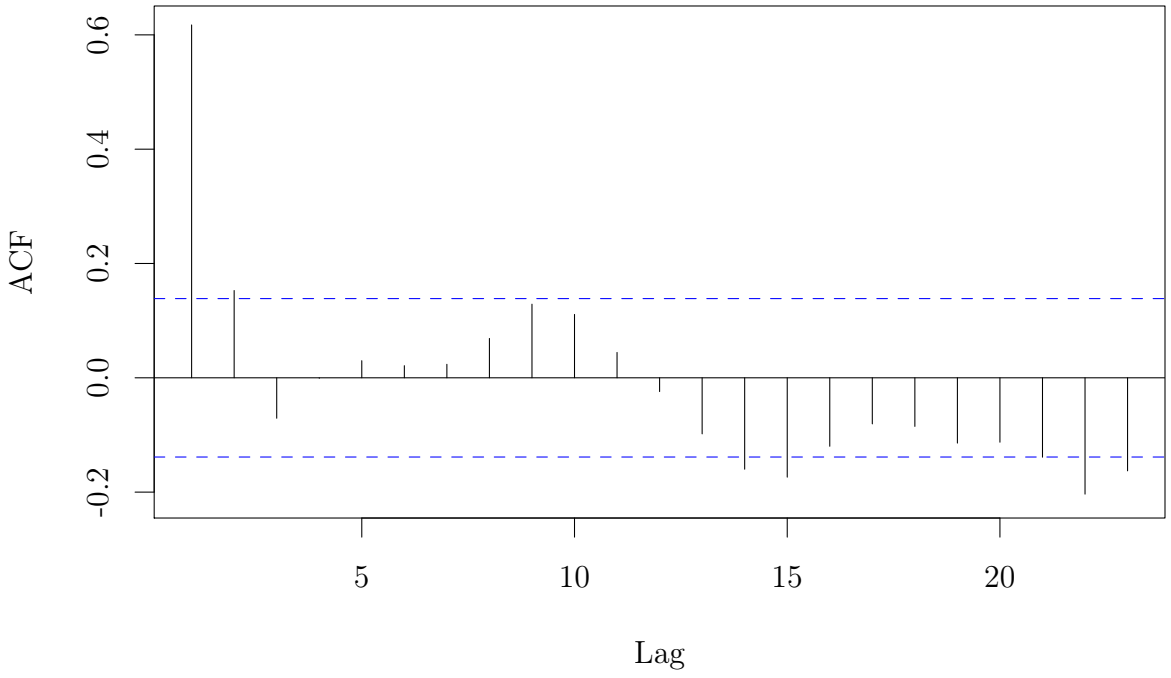
PACF, MA(1), $y_t = 0.7\varepsilon_{t-1} + \varepsilon_t$



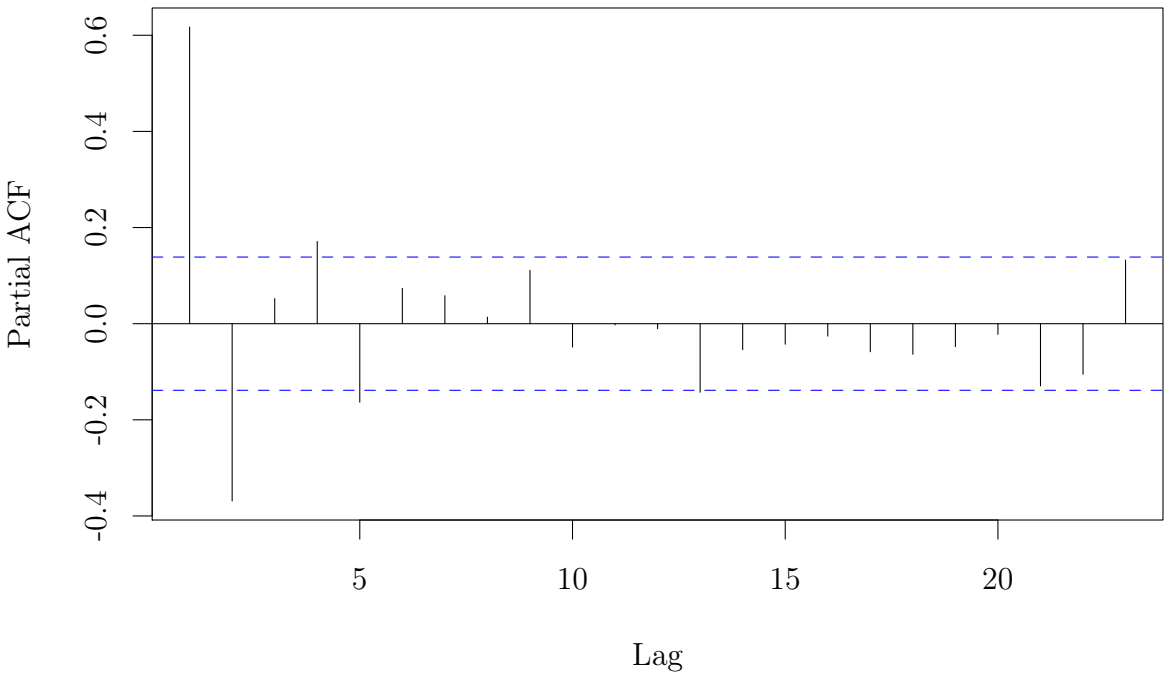
MA(2), $y_t = 0.9\varepsilon_{t-1} + 0.5\varepsilon_{t-1} + \varepsilon_t$



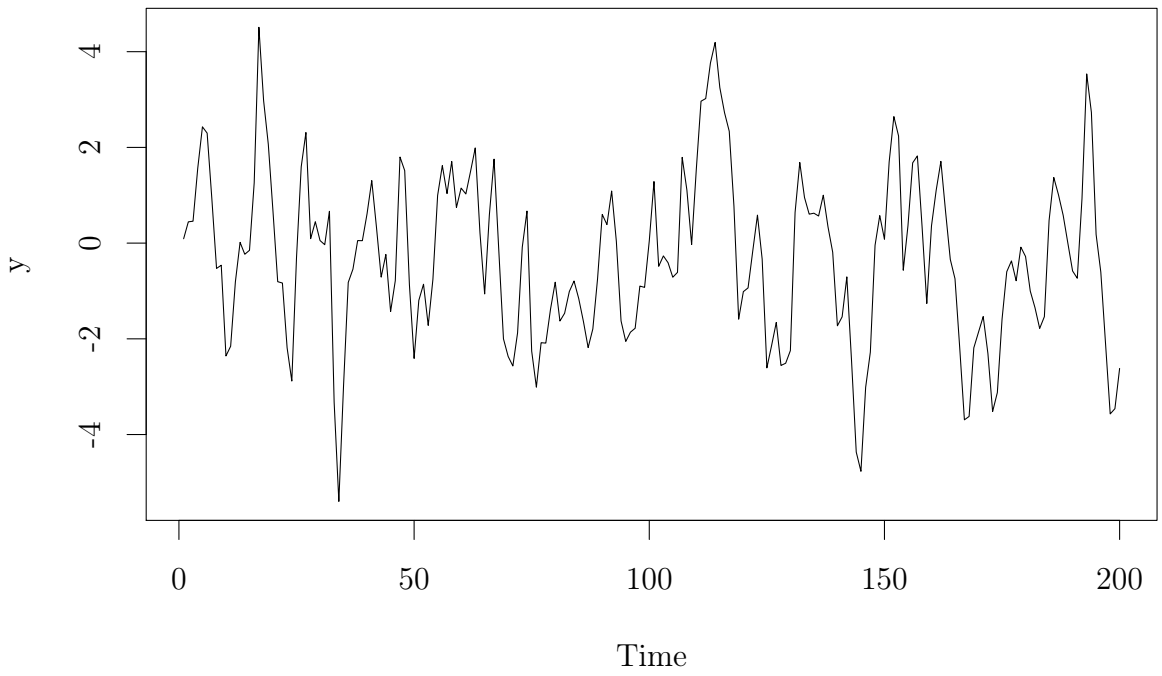
ACF, MA(2), $y_t = 0.9\varepsilon_{t-1} + 0.5\varepsilon_{t-1} + \varepsilon_t$



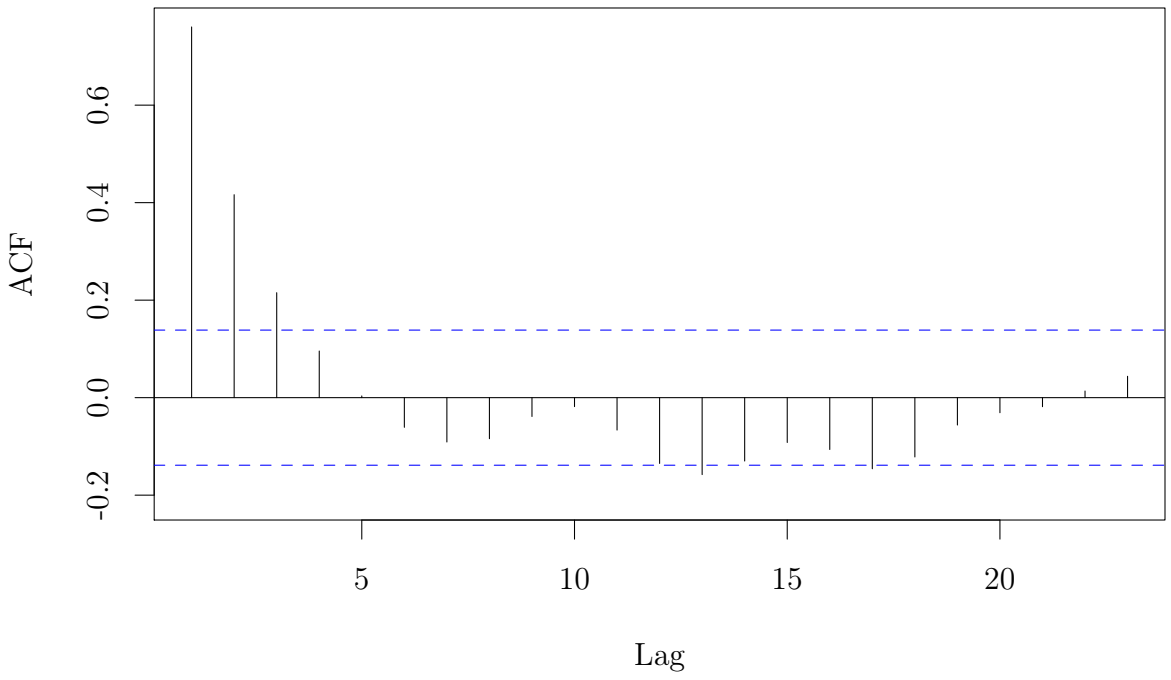
PACF, MA(2), $y_t = 0.9\varepsilon_{t-1} + 0.5\varepsilon_{t-1} + \varepsilon_t$



ARMA(1,1), $y_t = 0.7y_{t-1} + 0.5\varepsilon_{t-1} + \varepsilon_t$



ACF, ARMA(1,1), $y_t = 0.7y_{t-1} + 0.5\varepsilon_{t-1} + \varepsilon_t$



PACF, ARMA(1,1), $y_t = 0.7y_{t-1} + 0.5\varepsilon_{t-1} + \varepsilon_t$