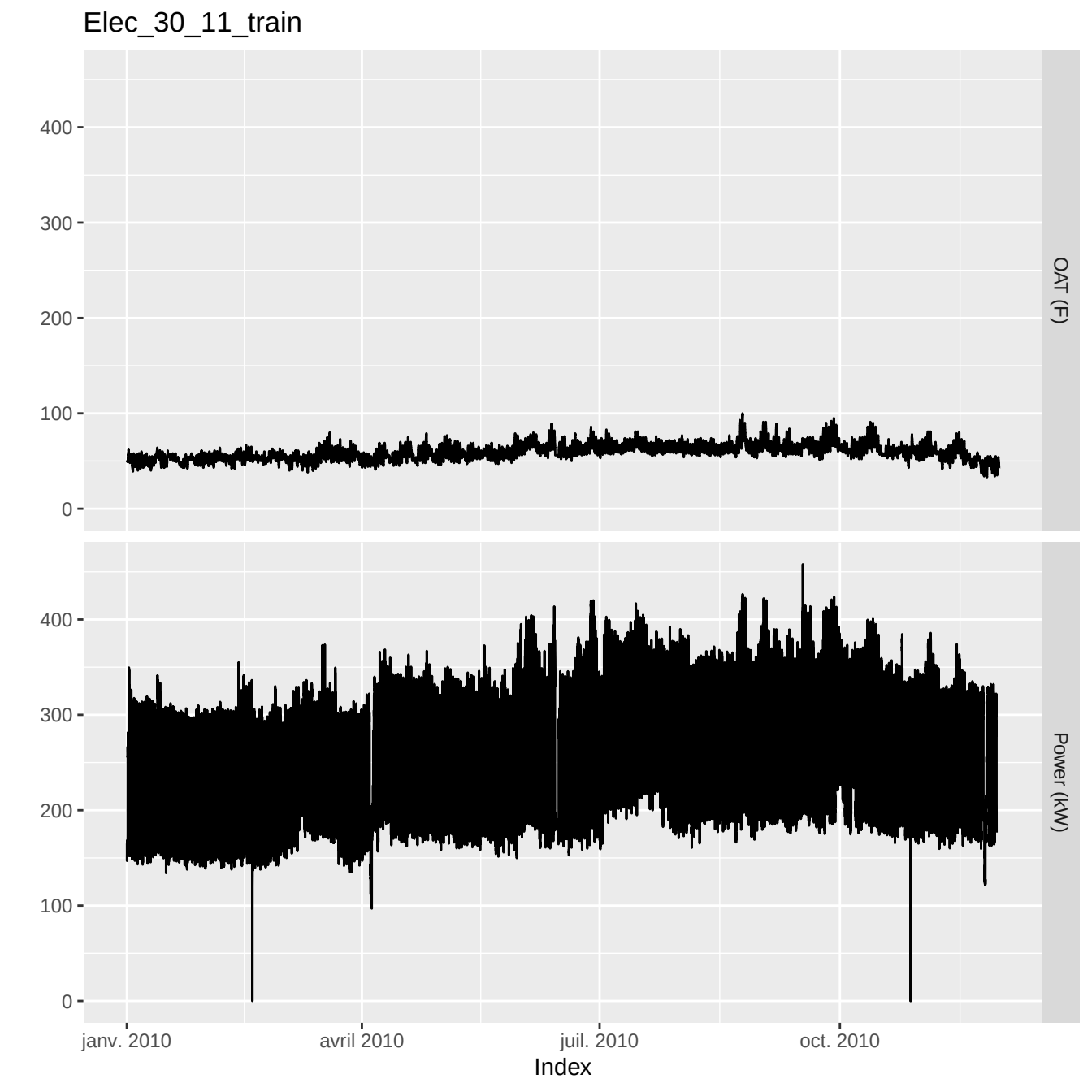
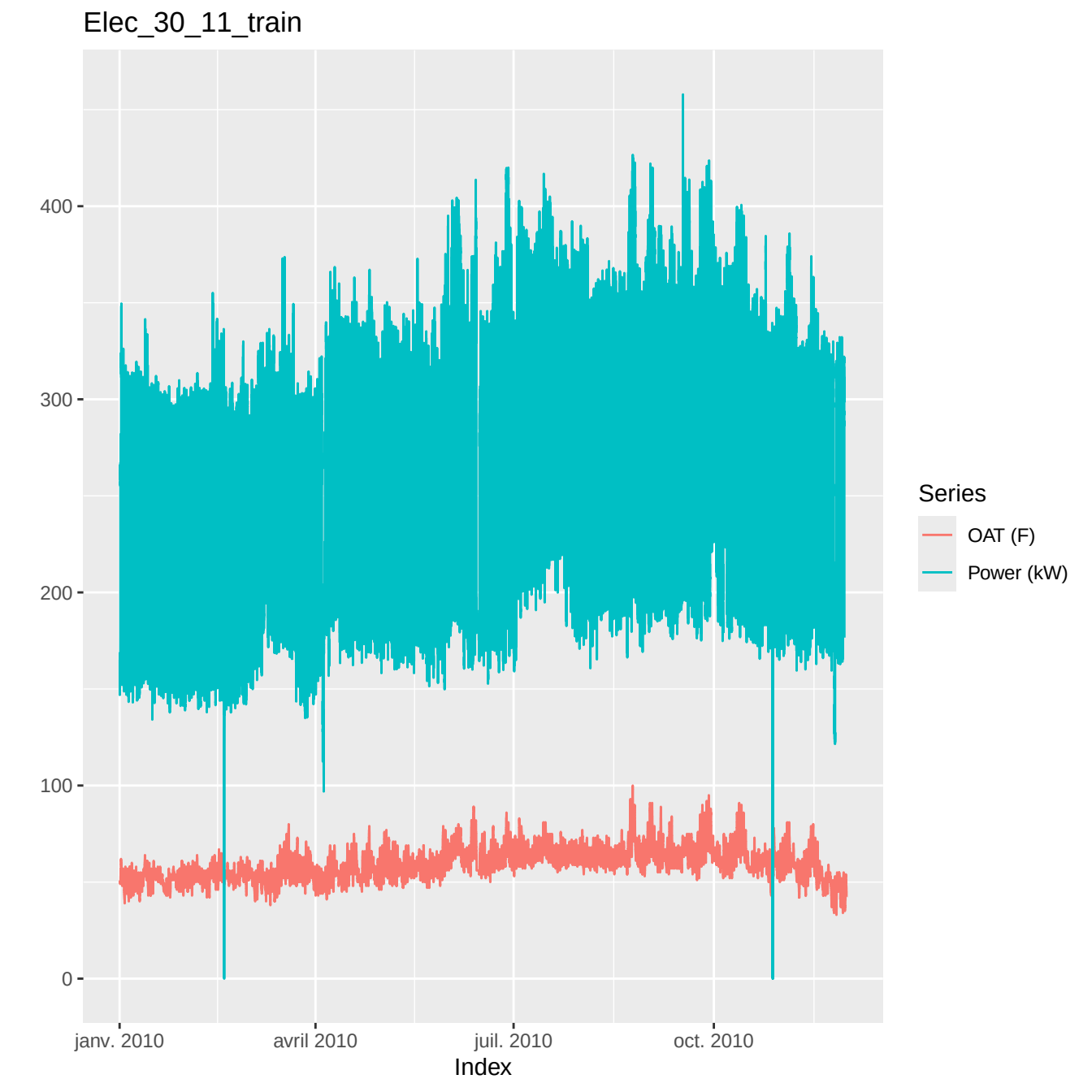
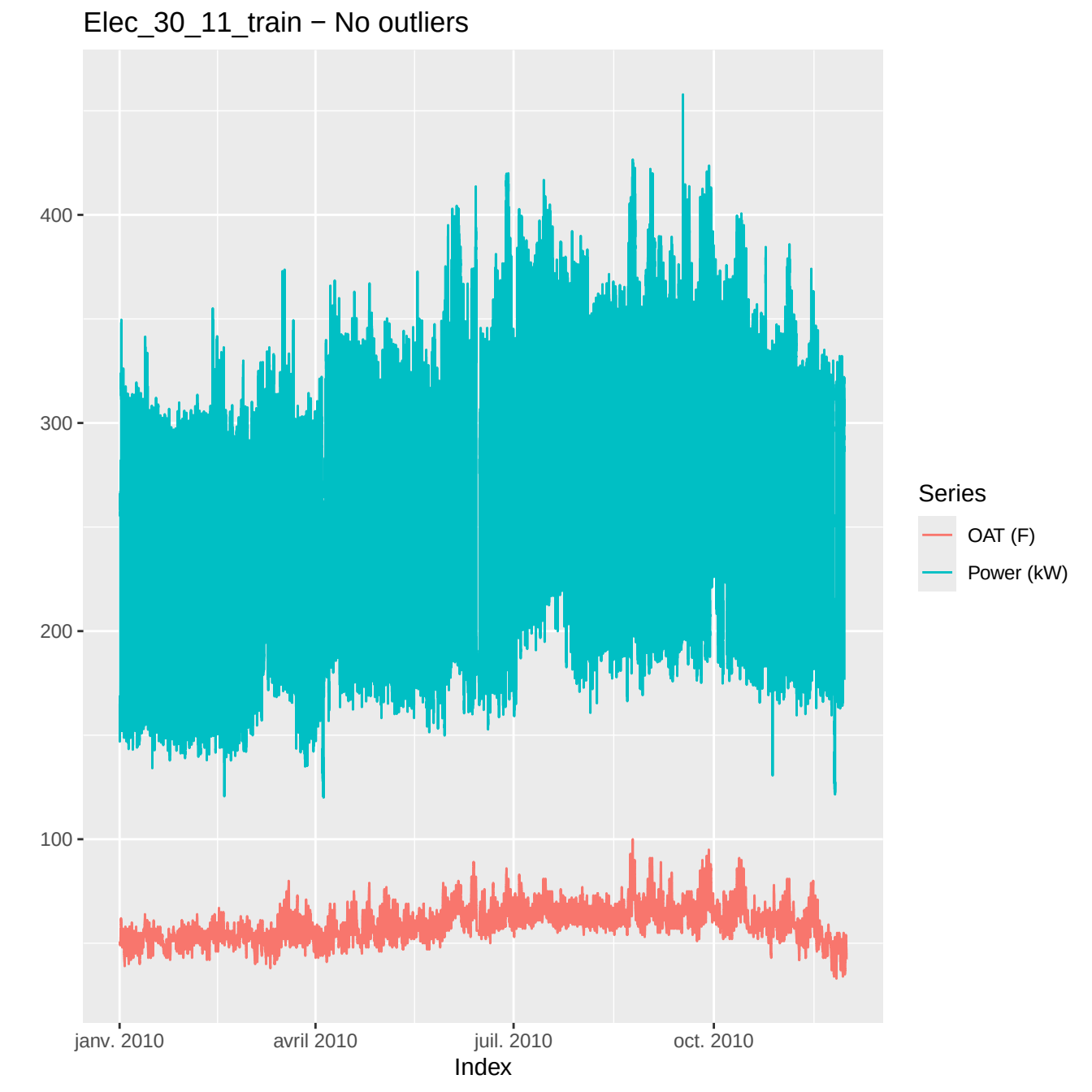
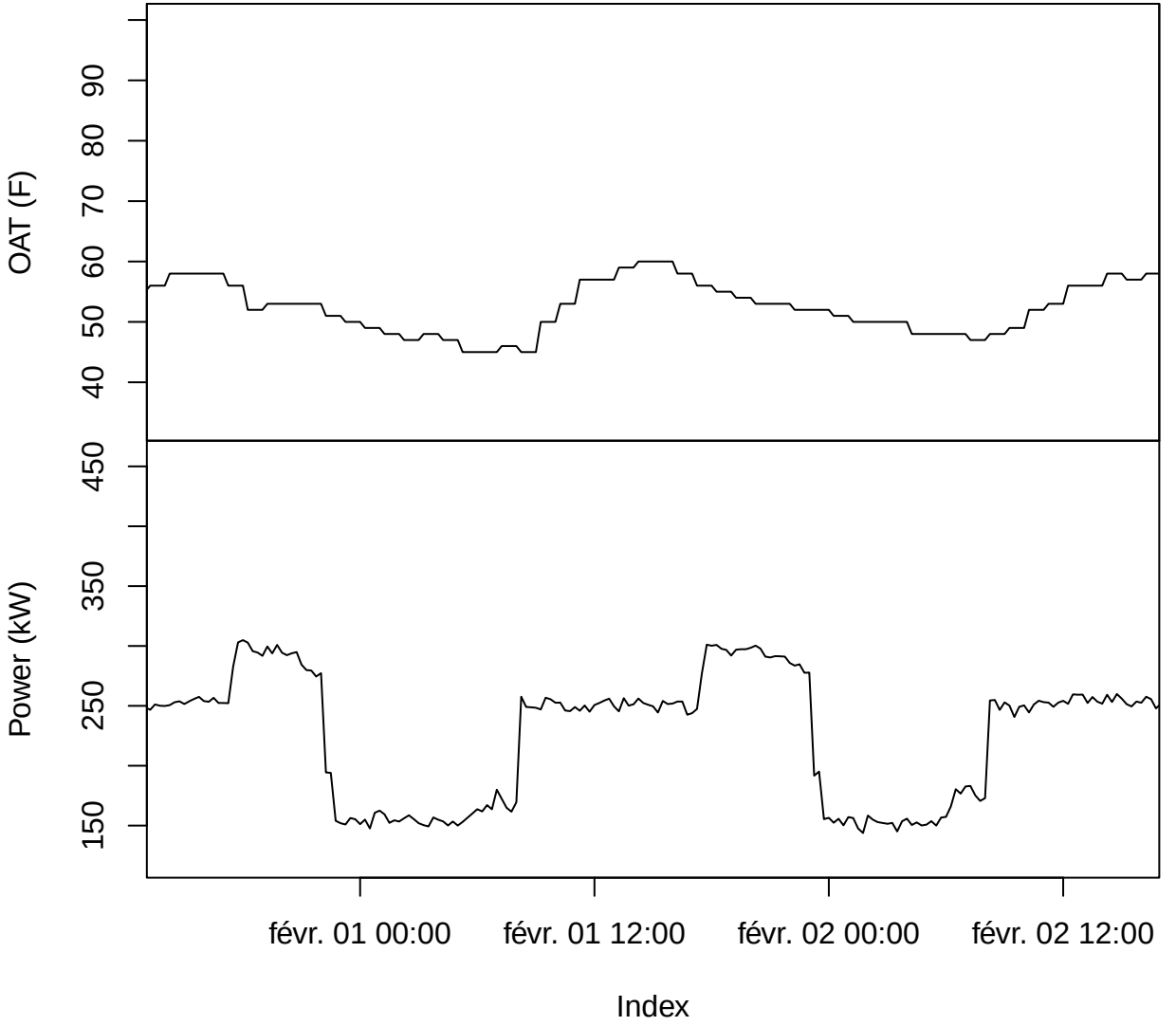
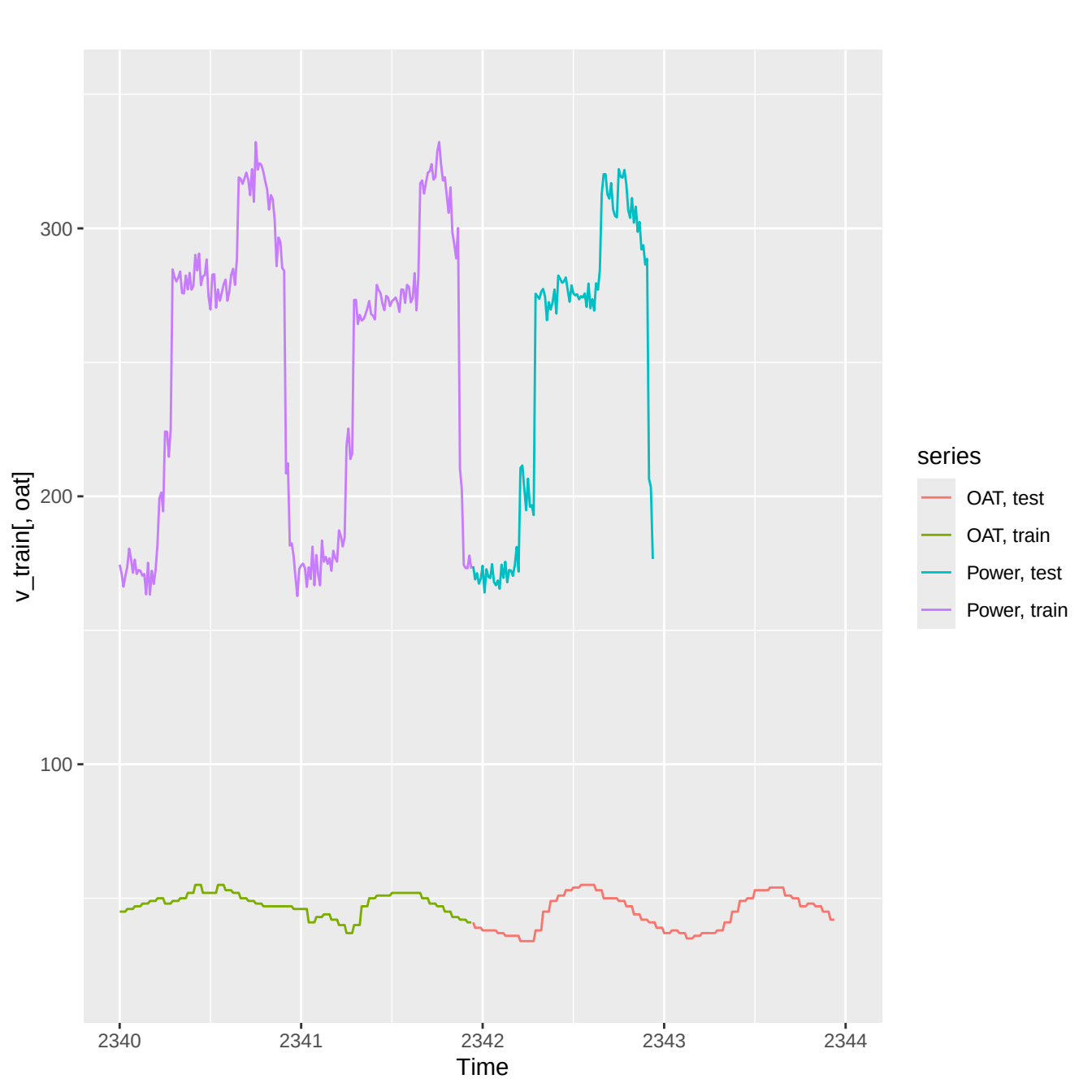

Elec_30_11_train
400
300
200
100
0
OAT (F)
400
300
200
100
0
Power (kW)
janv. 2010
avril 2010
juil. 2010
oct. 2010
Index


Elec_30_11_train
400
300
200
100
0
janv. 2010
avril 2010
juil. 2010
oct. 2010
Index
Series
OAT (F)
Power (kW)

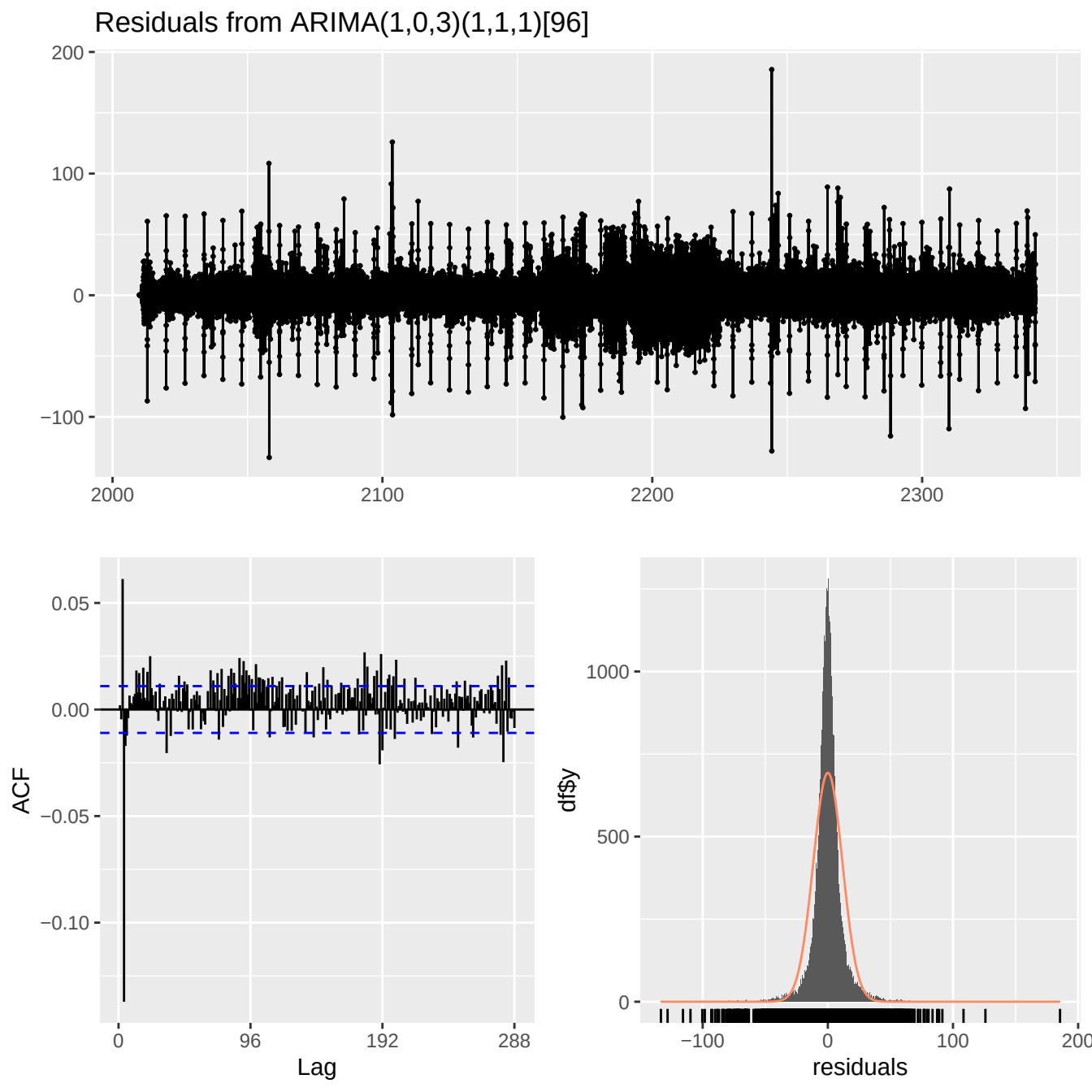

Elec_30_11_train − No outliers
400
300
200
100
janv. 2010
avril 2010
juil. 2010
oct. 2010
Index
Series
OAT (F)
Power (kW)

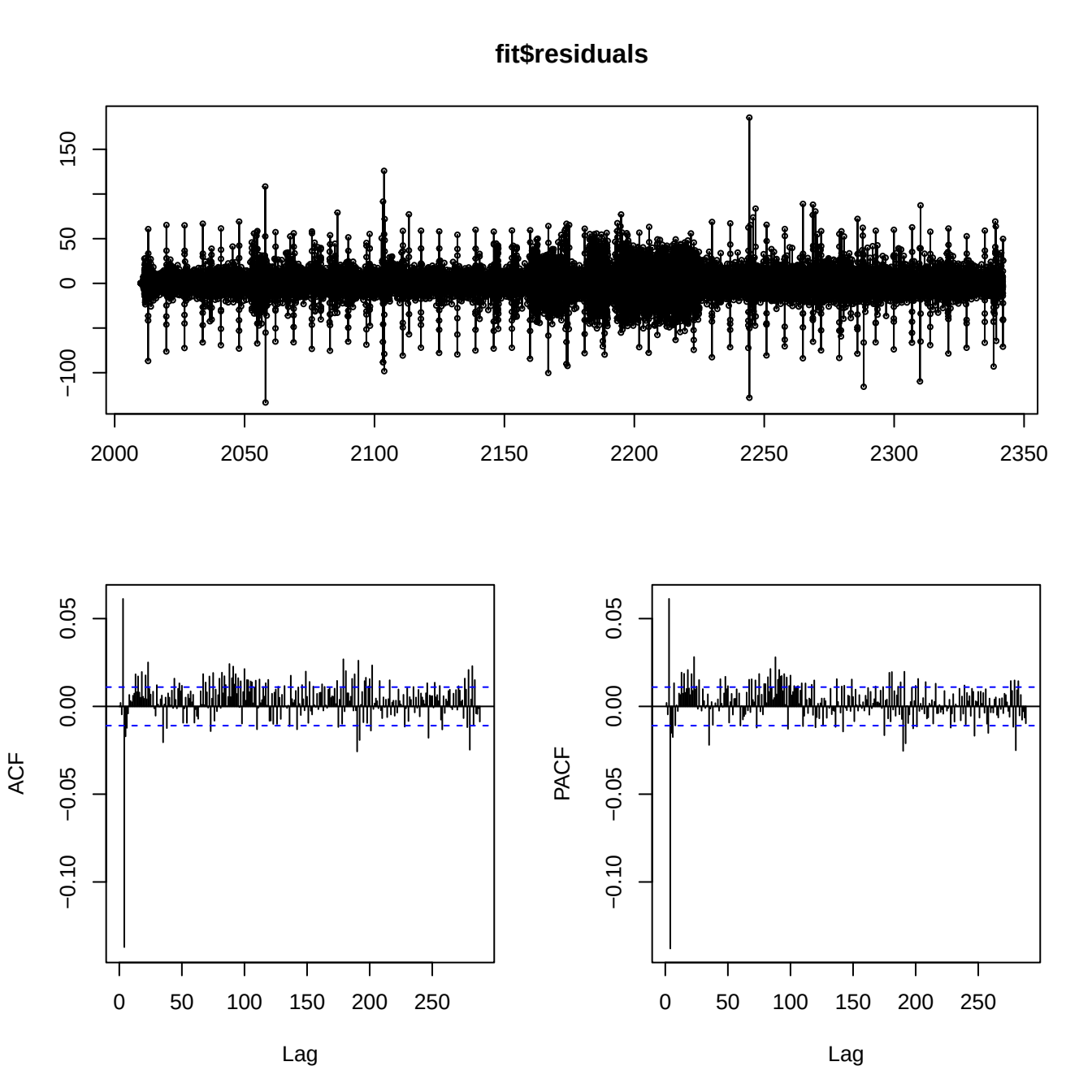

Search for periodicity : plot two days
OAT (F)
40
50
60
70
80
90
Power (kW)
150
250
350
450
févr. 01 00:00
févr. 01 12:00
févr. 02 00:00
févr. 02 12:00
Index

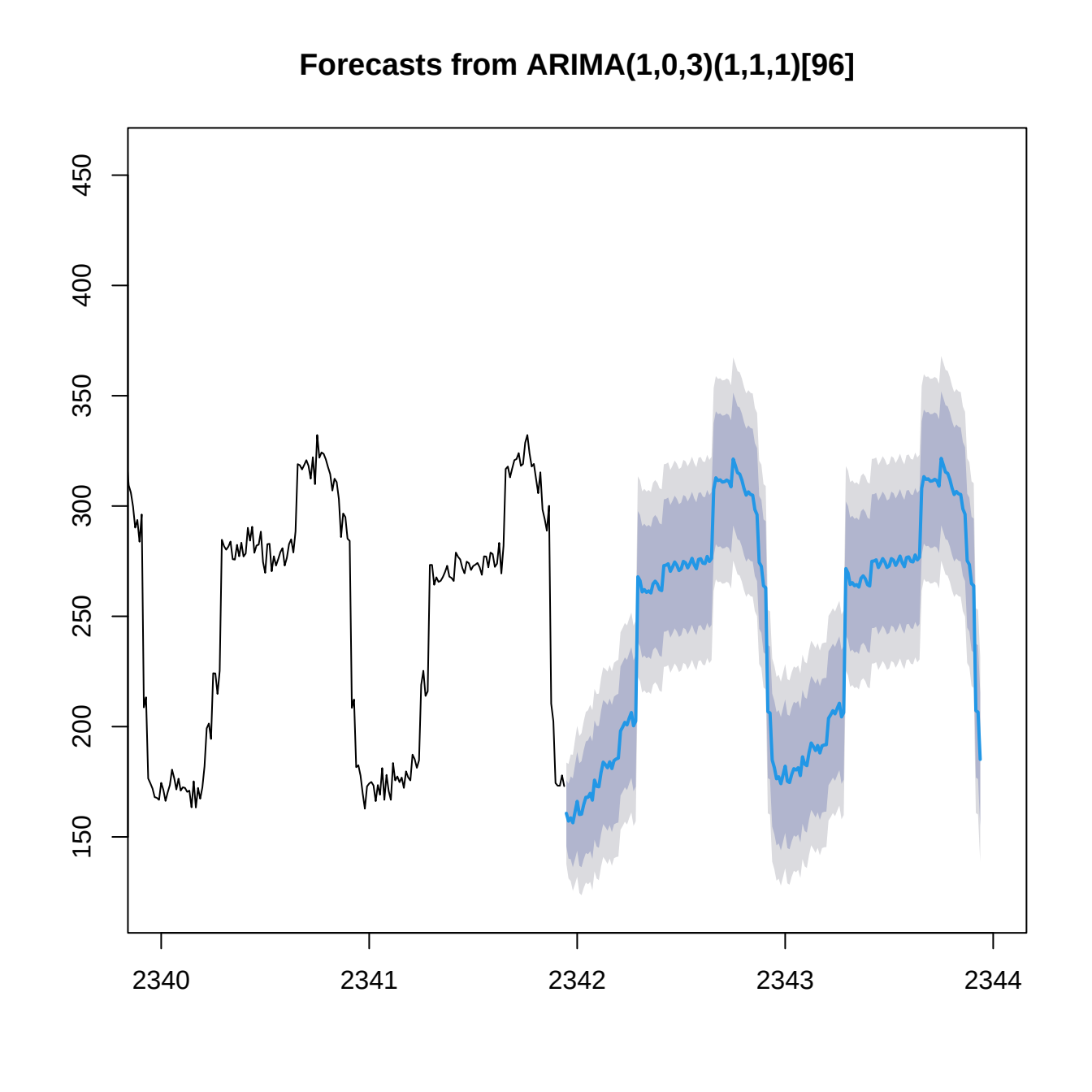

v_train[, oat]
300
200
100
2340
2341
2342
2343
2344
Time
series
OAT, test
OAT, train
Power, test
Power, train

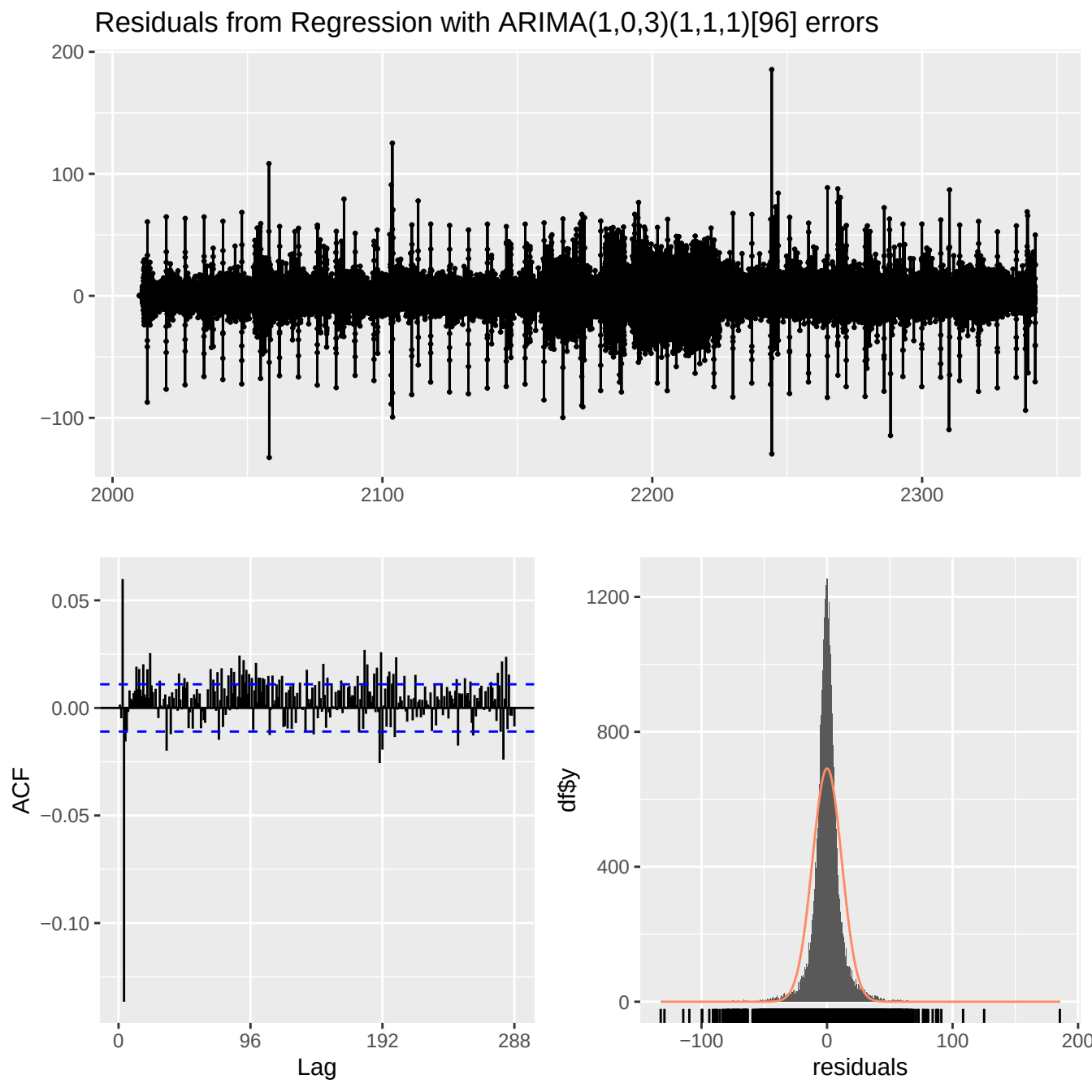
SARIMA

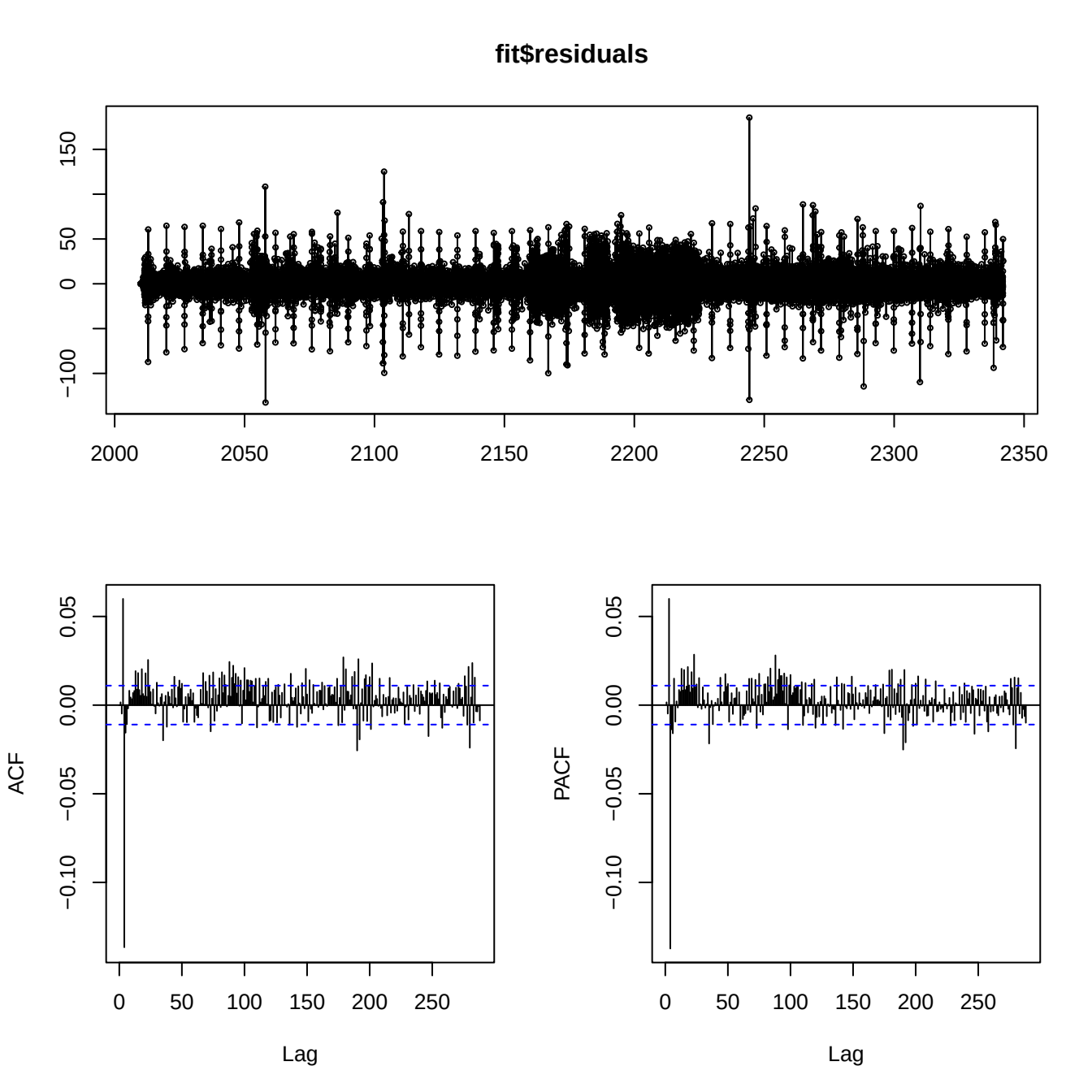
1. Without covariates
2. With covariates

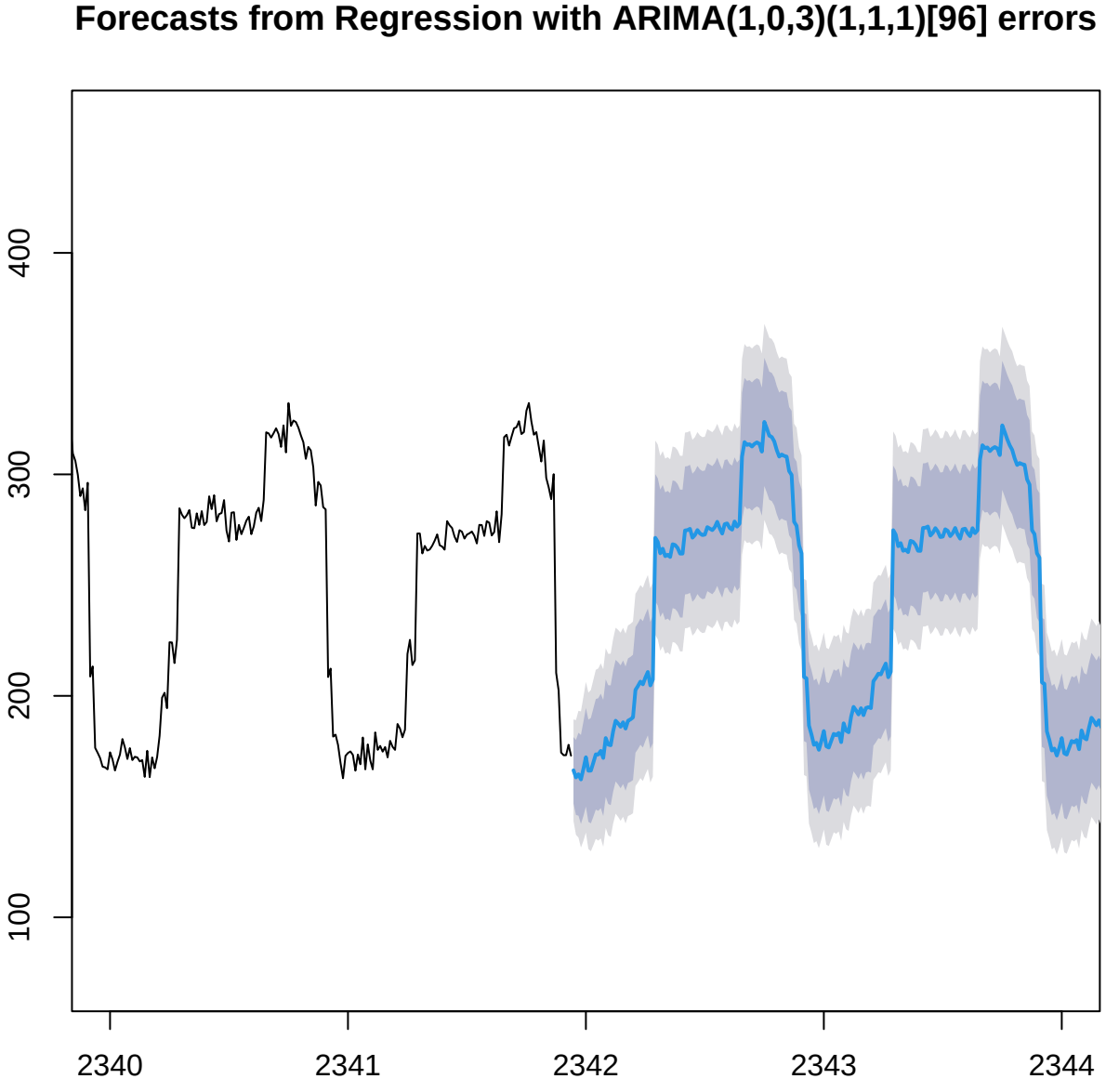

Residuals from ARIMA(1,0,3)(1,1,1)[96]
200
100
0
−100
2000
2100
2200
2300
0.05
0.00
−0.05
−0.10
ACF
0
96
192
288
Lag
1000
500
0
df$y
−100
0
100
200
residuals

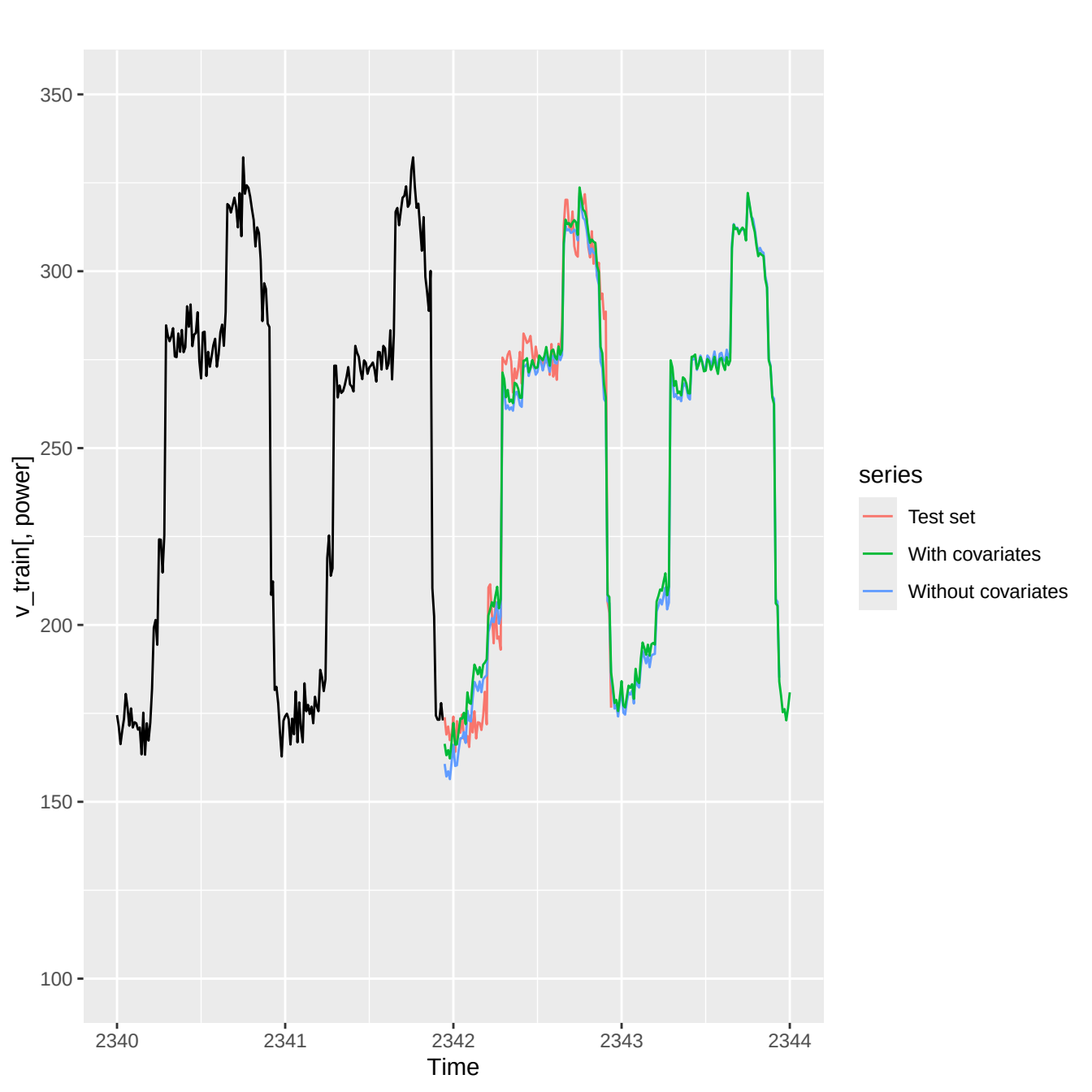

fit$residuals
150
50
0
−100
2000
2050
2100
2150
2200
2250
2300
2350
ACF
0.05
0.00
−0.05
−0.10
0
50
100
150
200
250
Lag
PACF
0.05
0.00
−0.05
−0.10
0
50
100
150
200
250
Lag

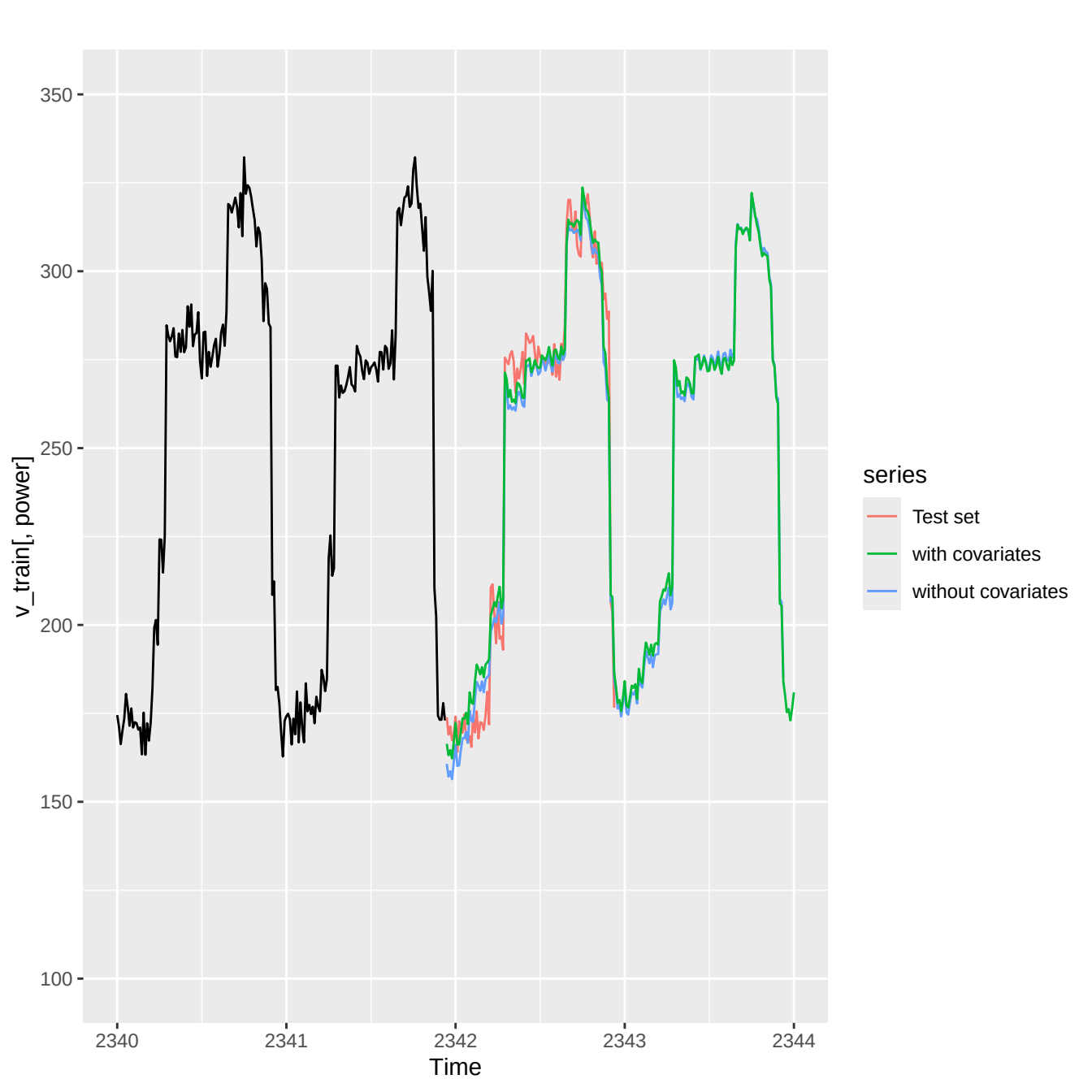

Forecasts from ARIMA(1,0,3)(1,1,1)[96]
450
400
350
300
250
200
150
2340
2341
2342
2343
2344


Residuals from Regression with ARIMA(1,0,3)(1,1,1)[96] errors
200
100
0
−100
2000
2100
2200
2300
ACF
0.05
0.00
−0.05
−0.10
0
96
192
288
Lag
df$y
1200
800
400
0
−100
0
100
200
residuals


fit$residuals
150
50
0
−100
2000
2050
2100
2150
2200
2250
2300
2350
ACF
0.05
0.00
−0.05
−0.10
0
50
100
150
200
250
Lag
PACF
0.05
0.00
−0.05
−0.10
0
50
100
150
200
250
Lag

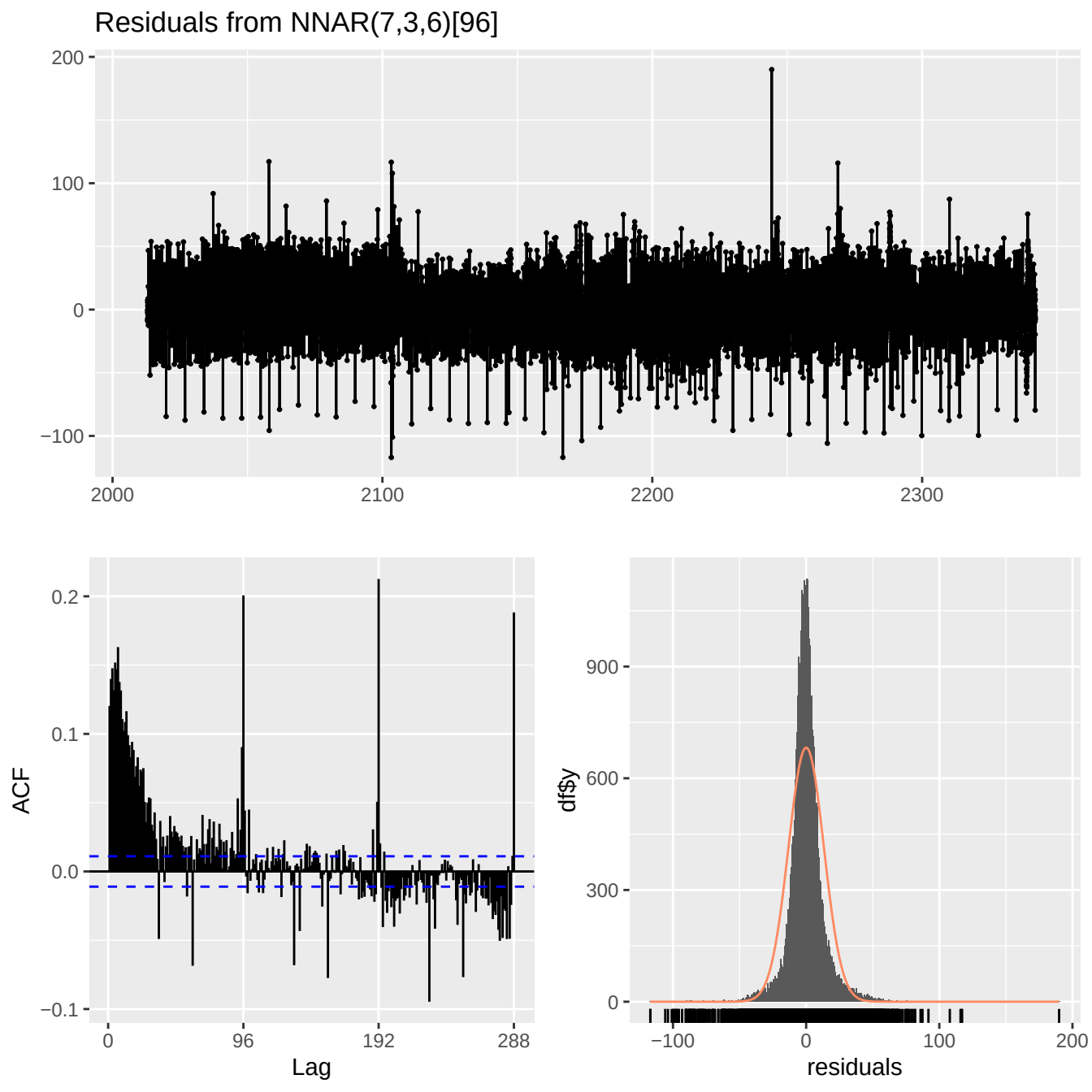

Forecasts from Regression with ARIMA(1,0,3)(1,1,1)[96] errors
400
300
200
100
2340
2341
2342
2343
2344

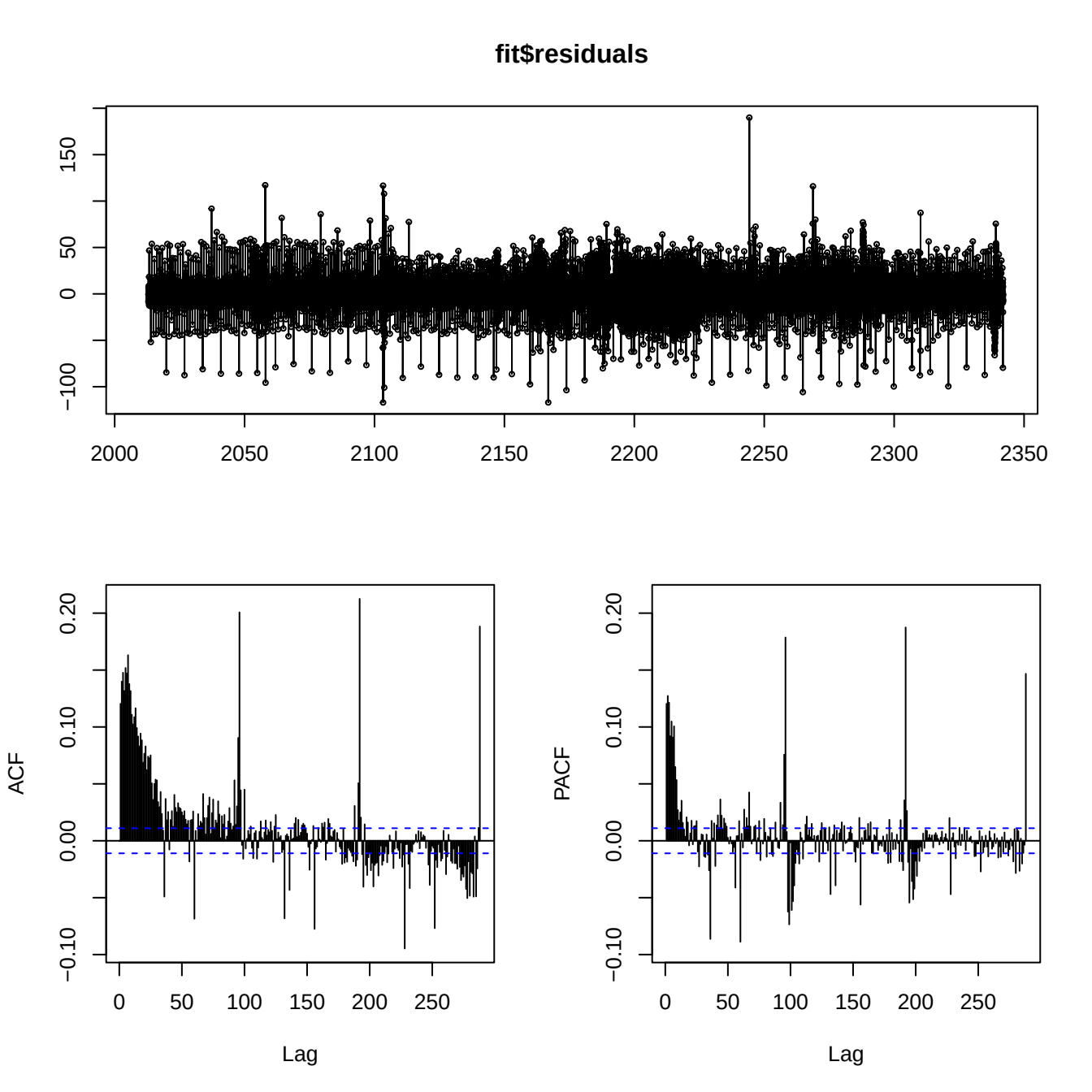

350
300
250
200
150
100
v_train[, power]
2340
2341
2342
2343
2344
Time
series
Test set
With covariates
Without covariates

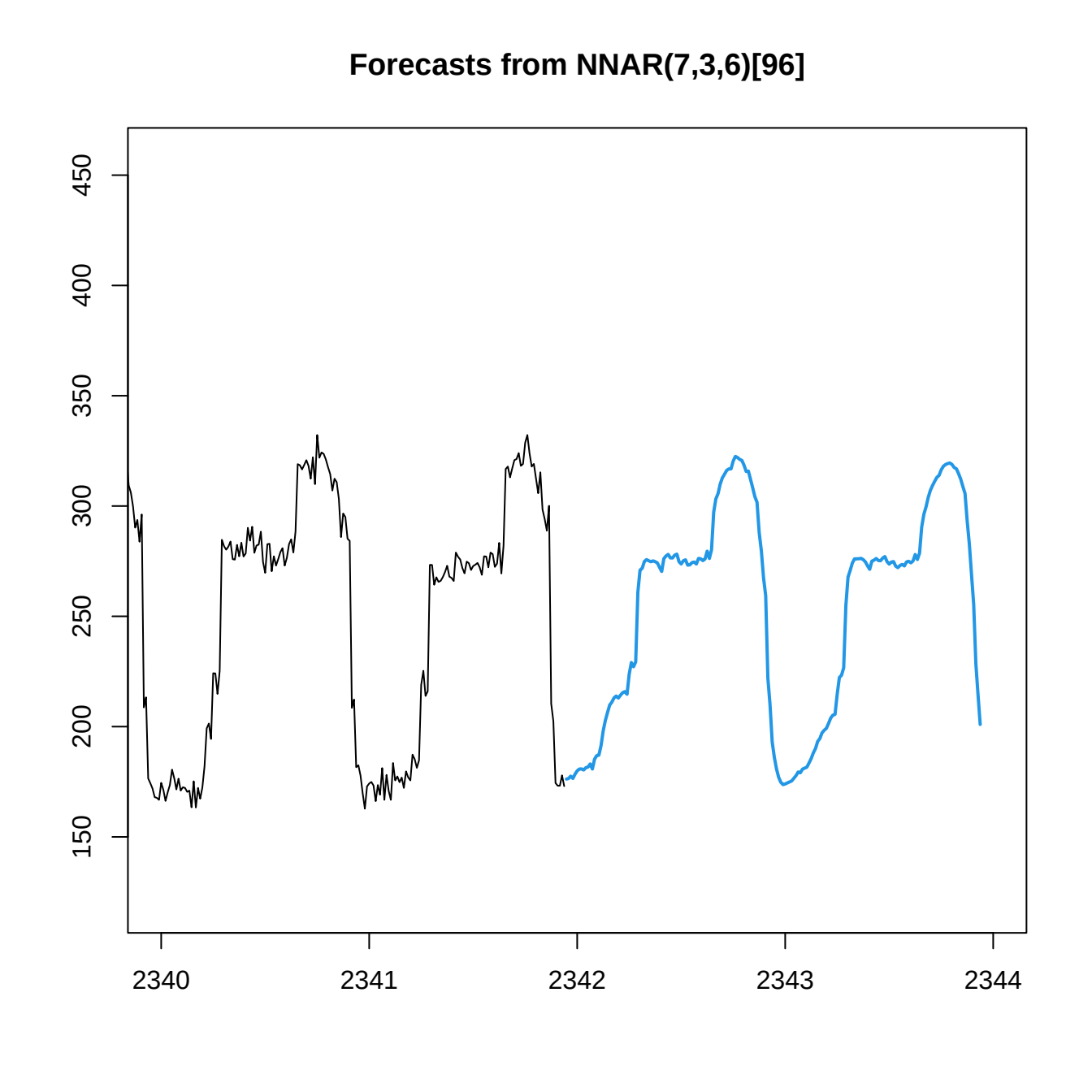

350
300
250
200
150
100
v_train[, power]
2340
2341
2342
2343
2344
Time
series
Test set
with covariates
without covariates

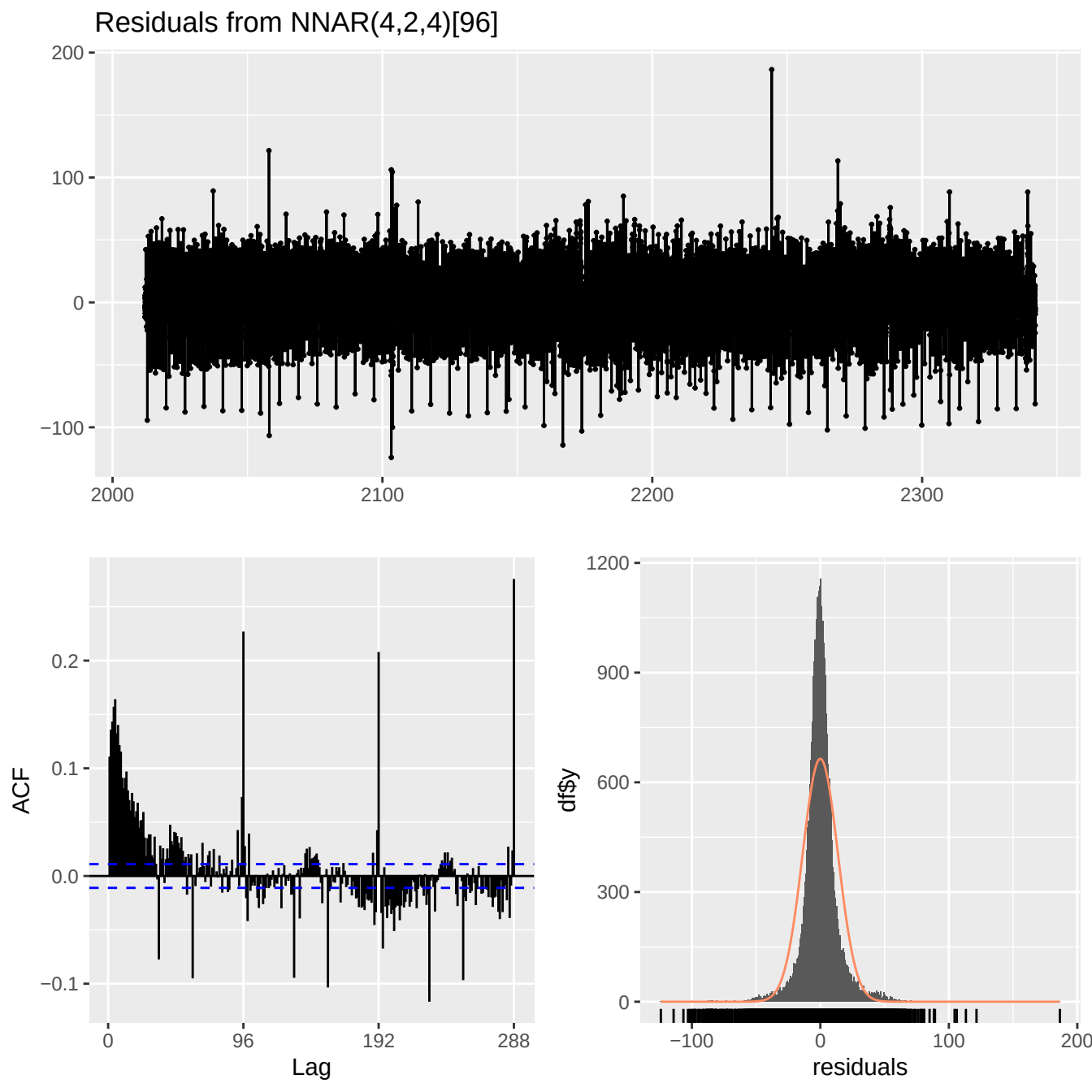
NEURAL NETWORK

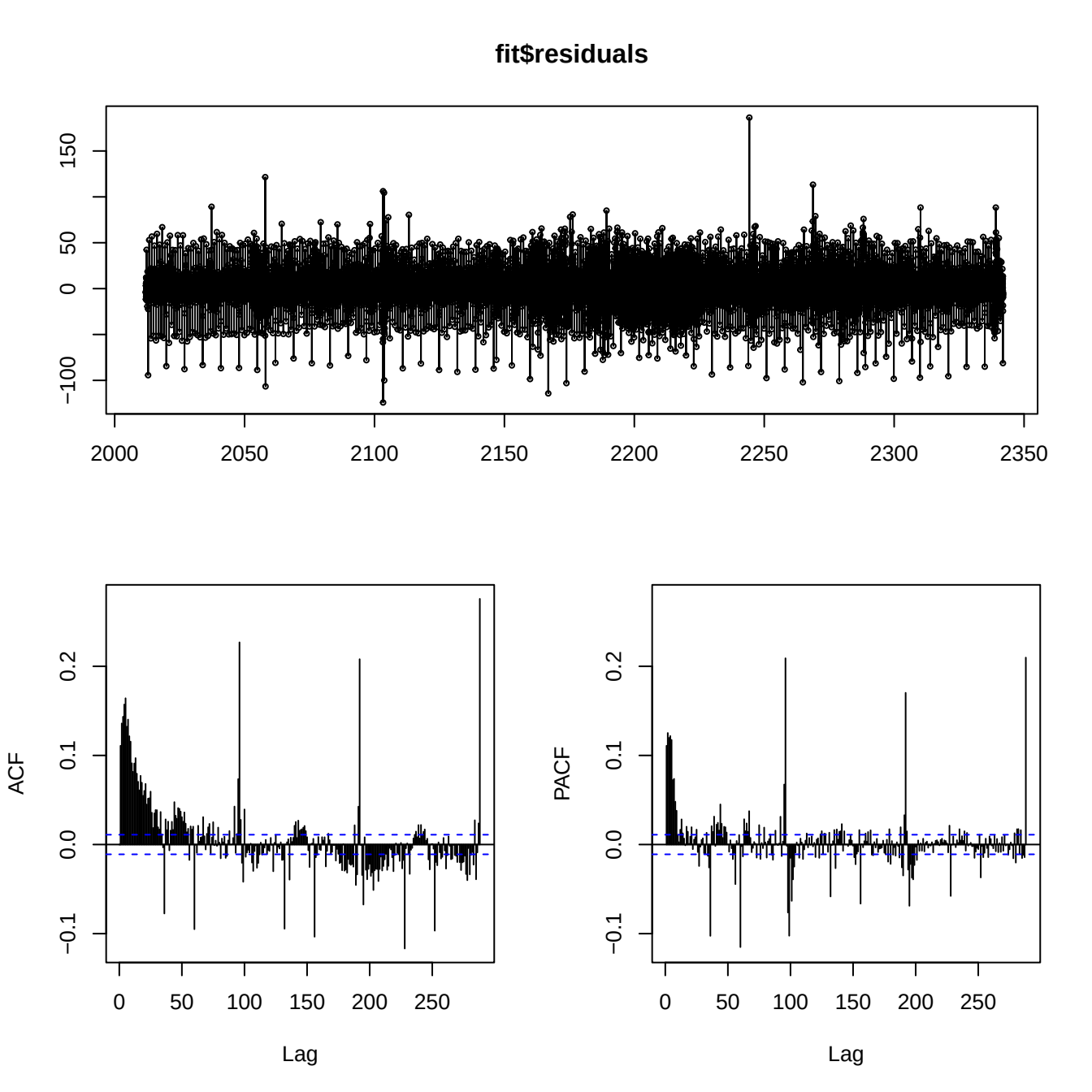
1. Without covariates
2. With covariates

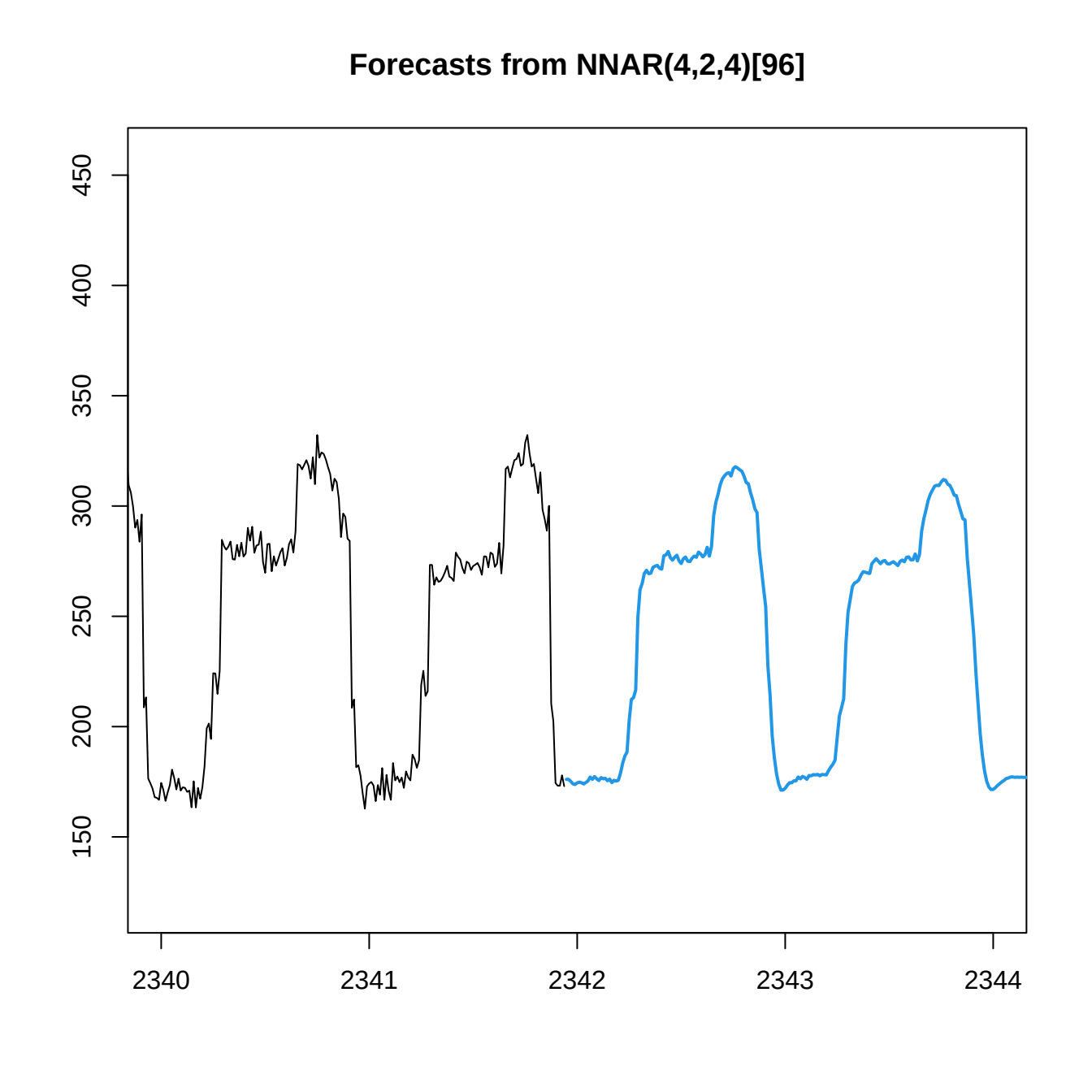

Residuals from NNAR(7,3,6)[96]
200
100
0
−100
2000
2100
2200
2300
ACF
0.2
0.1
0.0
−0.1
0
96
192
288
Lag
df$y
900
600
300
0
−100
0
100
200
residuals

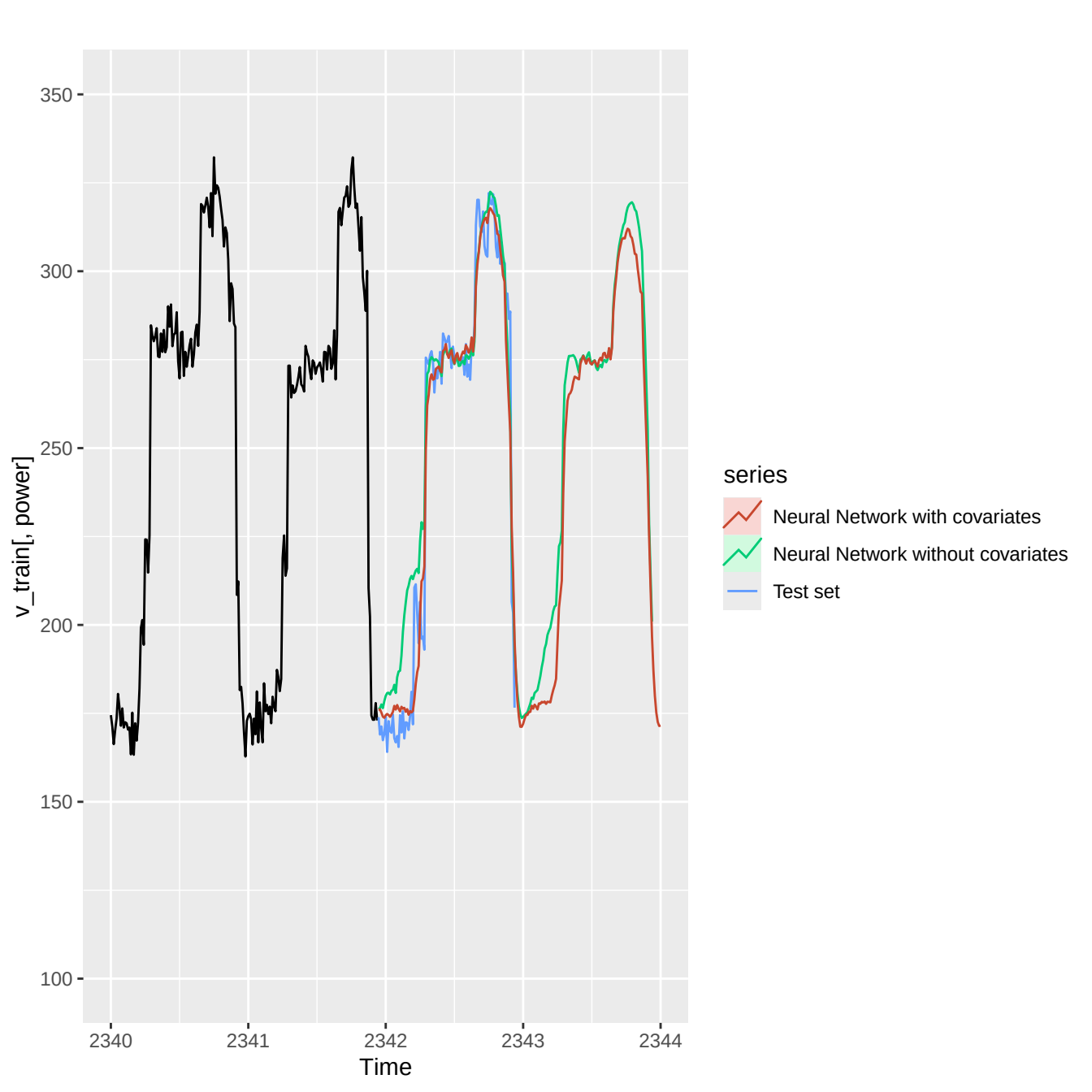

fit$residuals
150
50
0
−100
2000
2050
2100
2150
2200
2250
2300
2350
ACF
0.20
0.10
0.00
−0.10
0
50
100
150
200
250
Lag
PACF
0.20
0.10
0.00
−0.10
0
50
100
150
200
250
Lag


Forecasts from NNAR(7,3,6)[96]
450
400
350
300
250
200
150
2340
2341
2342
2343
2344

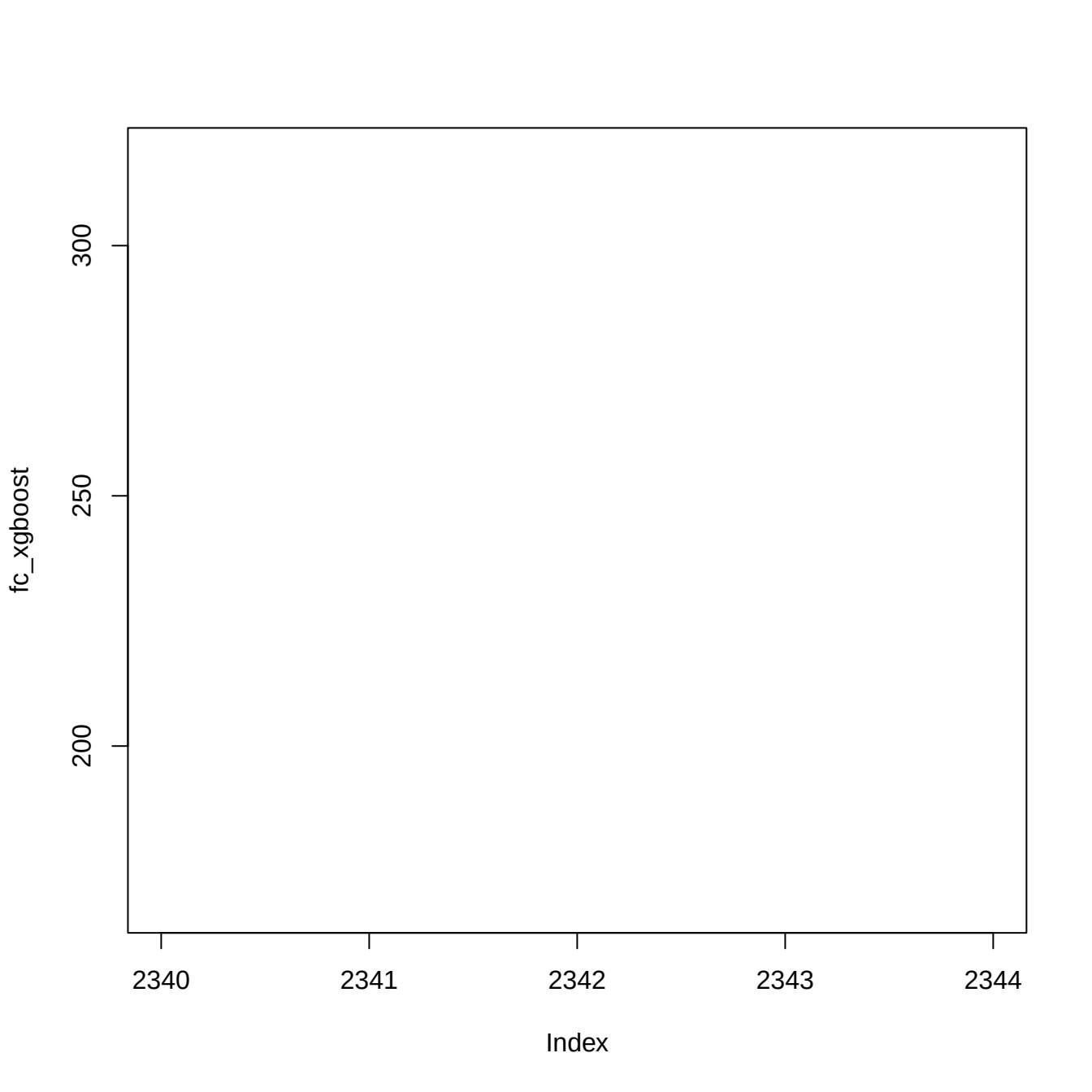

Residuals from NNAR(4,2,4)[96]
200
100
0
−100
2000
2100
2200
2300
ACF
0.2
0.1
0.0
−0.1
0
96
192
288
Lag
df$y
1200
900
600
300
0
−100
0
100
200
residuals

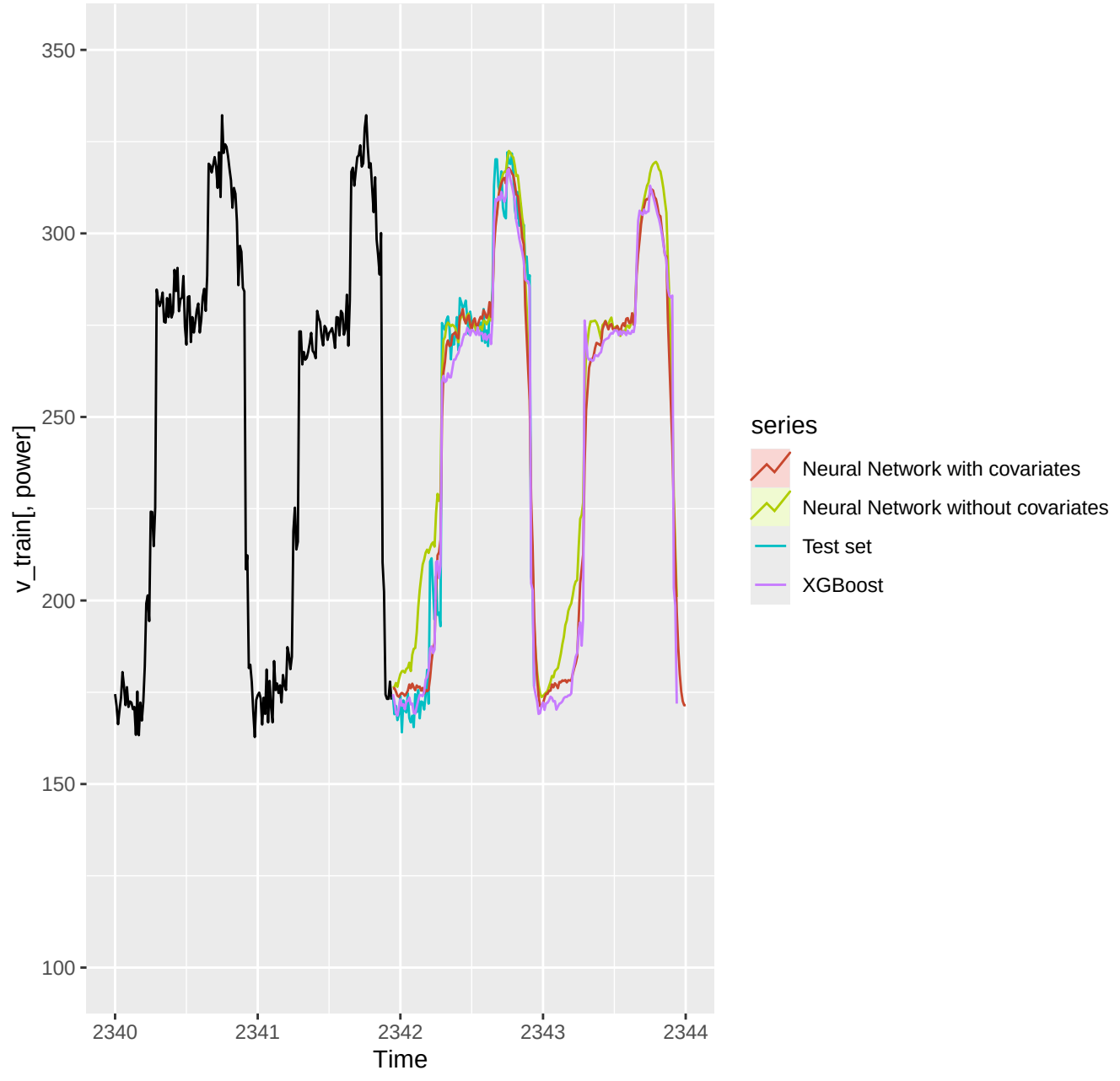

fit$residuals
150
50
0
−100
2000
2050
2100
2150
2200
2250
2300
2350
ACF
0.2
0.1
0.0
−0.1
0
50
100
150
200
250
Lag
PACF
0.2
0.1
0.0
−0.1
0
50
100
150
200
250
Lag

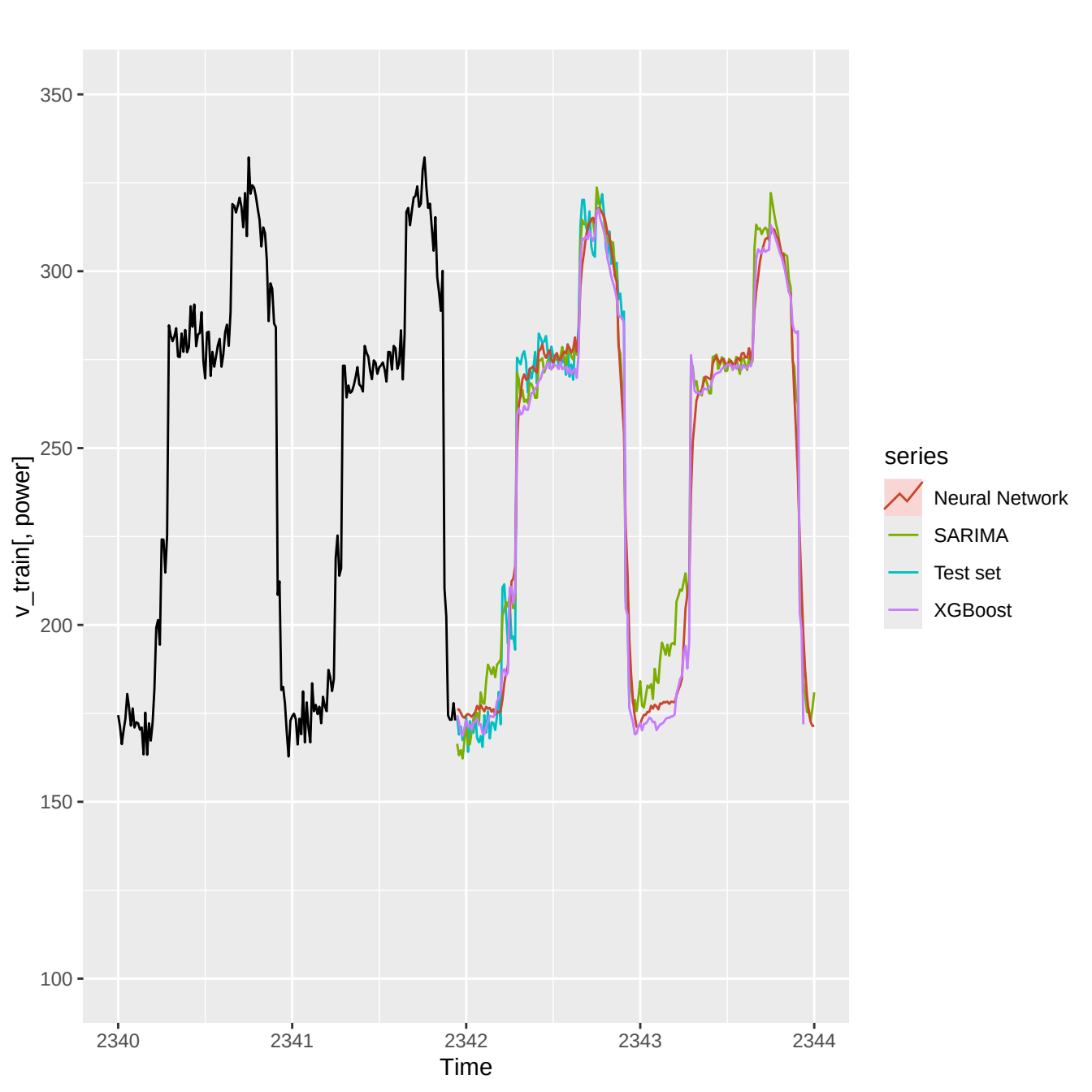

Forecasts from NNAR(4,2,4)[96]
450
400
350
300
250
200
150
2340
2341
2342
2343
2344


350
300
250
200
150
100
v_train[, power]
2340
2341
2342
2343
2344
Time
series
Neural Network with covariates
Neural Network without covariates
Test set

XGBoost


fc_xgboost
300
250
200
2340
2341
2342
2343
2344
Index


350
300
250
200
150
100
v_train[, power]
2340
2341
2342
2343
2344
Time
series
Neural Network with covariates
Neural Network without covariates
Test set
XGBoost


350
300
250
200
150
100
v_train[, power]
2340
2341
2342
2343
2344
Time
series
Neural Network
SARIMA
Test set
XGBoost