

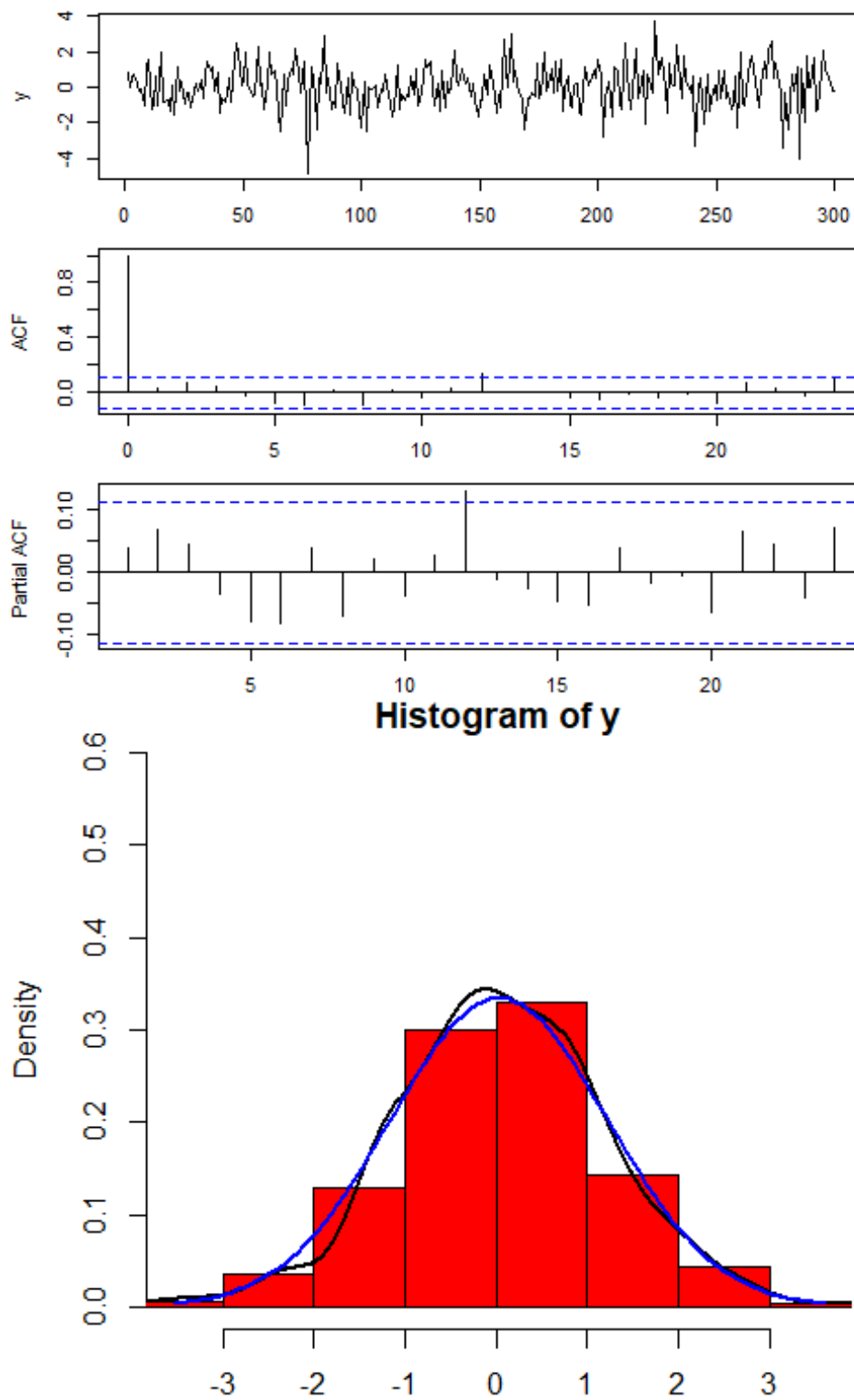
# Assignment

GroupD

21.01.2020

	S1	S2	S2 DIFF	S3	S3 DIFF	S4	S4 DIFF 1	S4 DIFF 2	S5	S5 Lag = 10	S6	S7	S7 DIFF	S7 DIFF Lag =10
Stationary	Yes	No	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes
Normal Dist	No	No	Yes	No	Yes	No	No	Yes	No	No	No	No	No	No
WN	Yes	No	Yes	No	No	No	No	No	No	Yes	No	No	No	Yes
SWN	??	No	Yes	No	No	No	No	No	No	No	No	No	No	No
GWN	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No
Linear Model?	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Non -Linear? Model	No	??	No	??	??	??	??	??	??	Yes	??	??	??	Yes
Transformation	No	Yes	No	Yes	No	Yes	Yes	No	No	No	No	Yes	No	No
	S1	S2	S2 DIFF	S3	S3 DIFF	S4	S4 DIFF 1	S4 DIFF 2	S5	S5 Lag = 10	S6	S7	S7 DIFF	S7 DIFF Lag =10
Mean	0.03	-0.22	-0.02	-21.65	-0.13	1256.84	11.17	0.1287	0.007	0.007	0.007	10.88	0.00	0.00
ndiffs(stationarity)	0	1	0	1	0	2.00	1	0	0	0	0	1	0	0
Saphiro (y)	0.019	0	0.69	0	0.21	0.00	0	0.34	0	0	0	0	0	0
Box-test(y)	0.53	0	0.89	0.000	0	0.00	0	0	0.03	0.1039	0	0	0.004	0.6
Box-Test(y^2)	0.82	0	0.97	0	0.0004	0.00	0	0	0	0	0	0	0	0

## SERIE 1



## Tests Serie 1

### Mean:

```
## [1] 0.03205
```

### St Deviation:

```
## [1] 1.193712
```

### Skewness:

```
## [1] -0.2795834
## attr(,"method")
## [1] "moment"
```

### Kurtosis:

```
## [1] 4.040454
## attr(,"method")
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 0
```

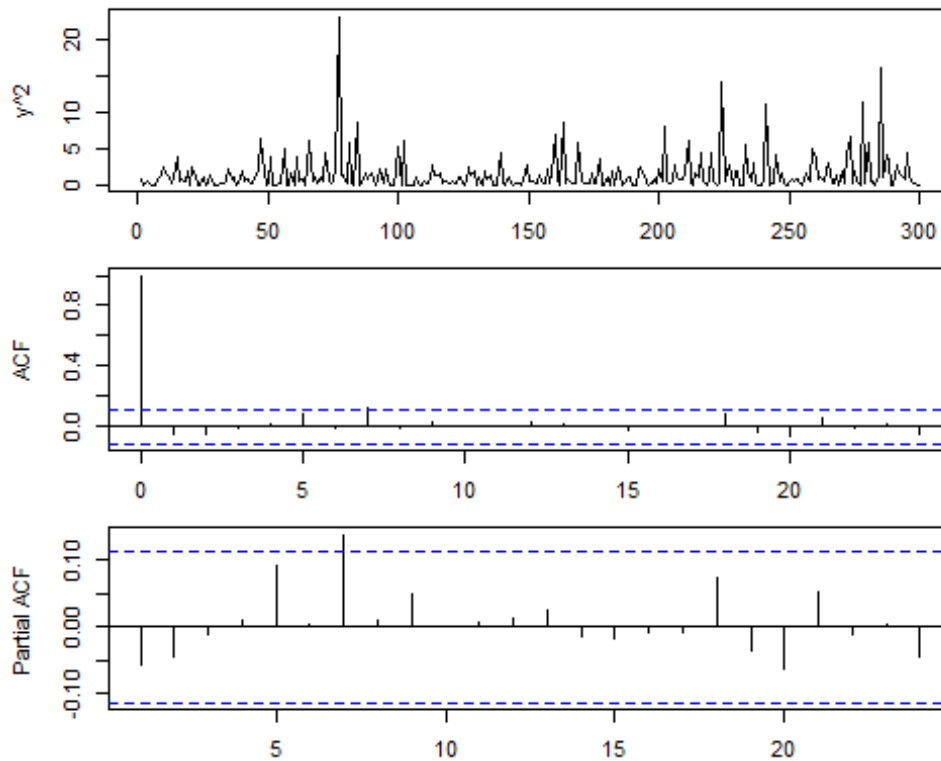
### Shapiro Test:

```
##
##  Shapiro-Wilk normality test
##
## data:  y
## W = 0.98868, p-value = 0.01941
```

### Box test (Linear correlation):

```
##
##  Box-Ljung test
##
## data:  y
## X-squared = 18.804, df = 20, p-value = 0.5346
```

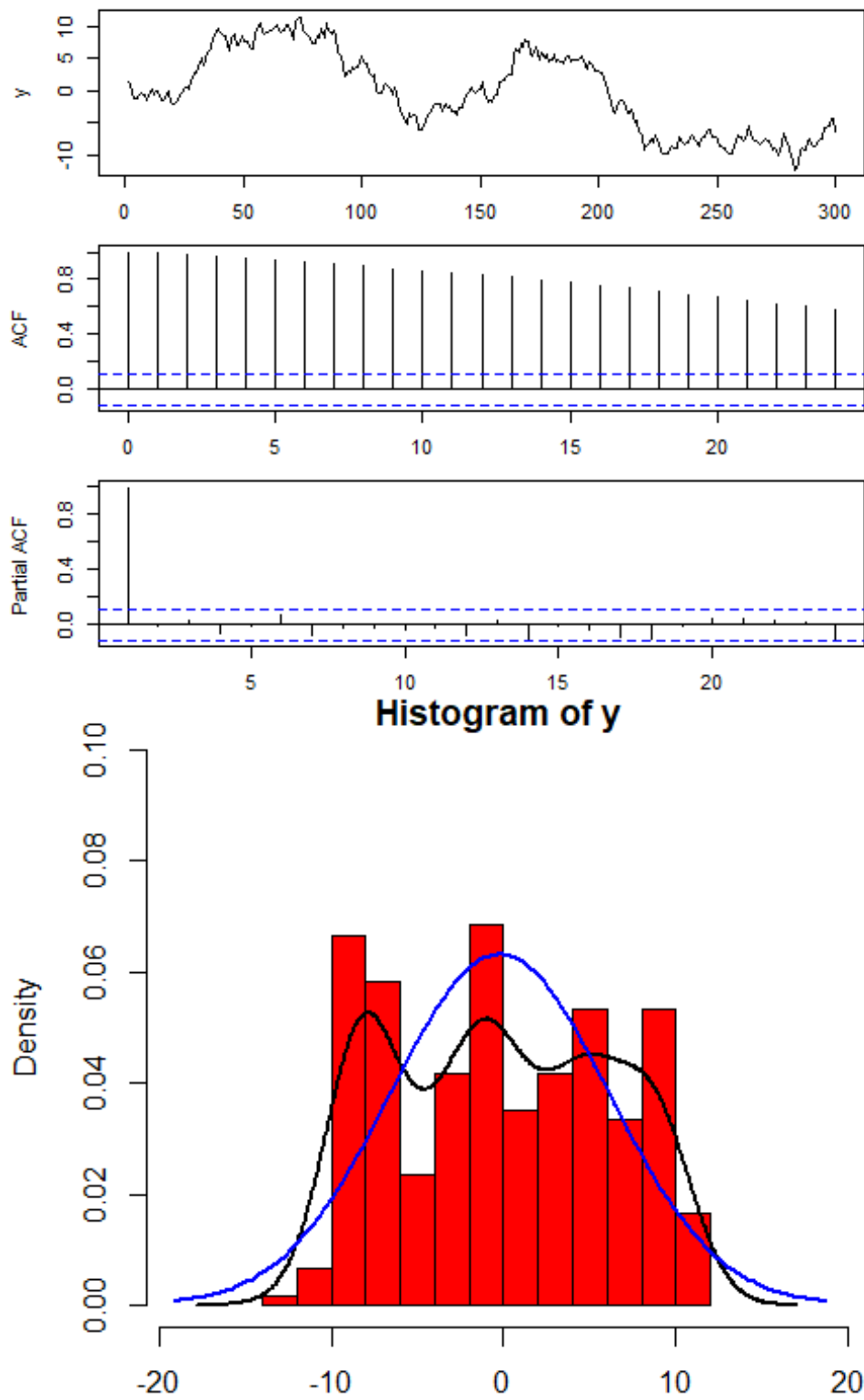
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data: y^2  
## X-squared = 14.168, df = 20, p-value = 0.8219
```

## SERIE 2



## Tests Serie 2

### Mean:

```
## [1] -0.22853
```

### St Deviation:

```
## [1] 6.31268
```

### Skewness:

```
## [1] 0.04883792
## attr(,"method")
## [1] "moment"
```

### Kurtosis:

```
## [1] 1.765163
## attr(,"method")
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 1
```

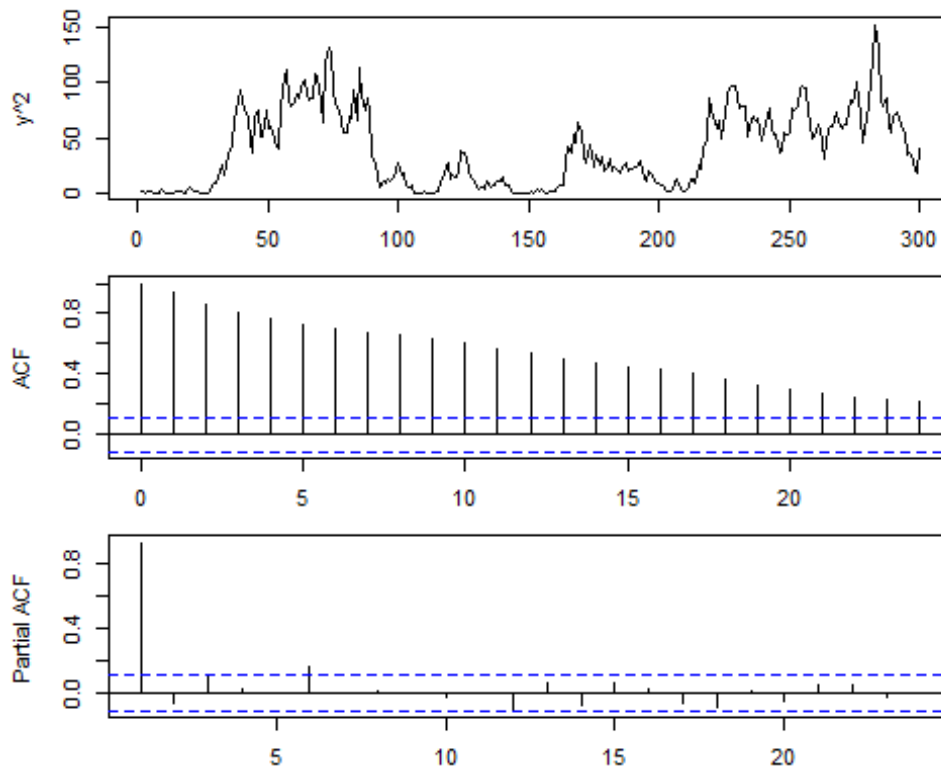
### Shapiro Test:

```
##
##  Shapiro-Wilk normality test
##
## data:  y
## W = 0.94921, p-value = 1.133e-08
```

### Box test (Linear correlation):

```
##
##  Box-Ljung test
##
## data:  y
## X-squared = 4509.5, df = 20, p-value < 2.2e-16
```

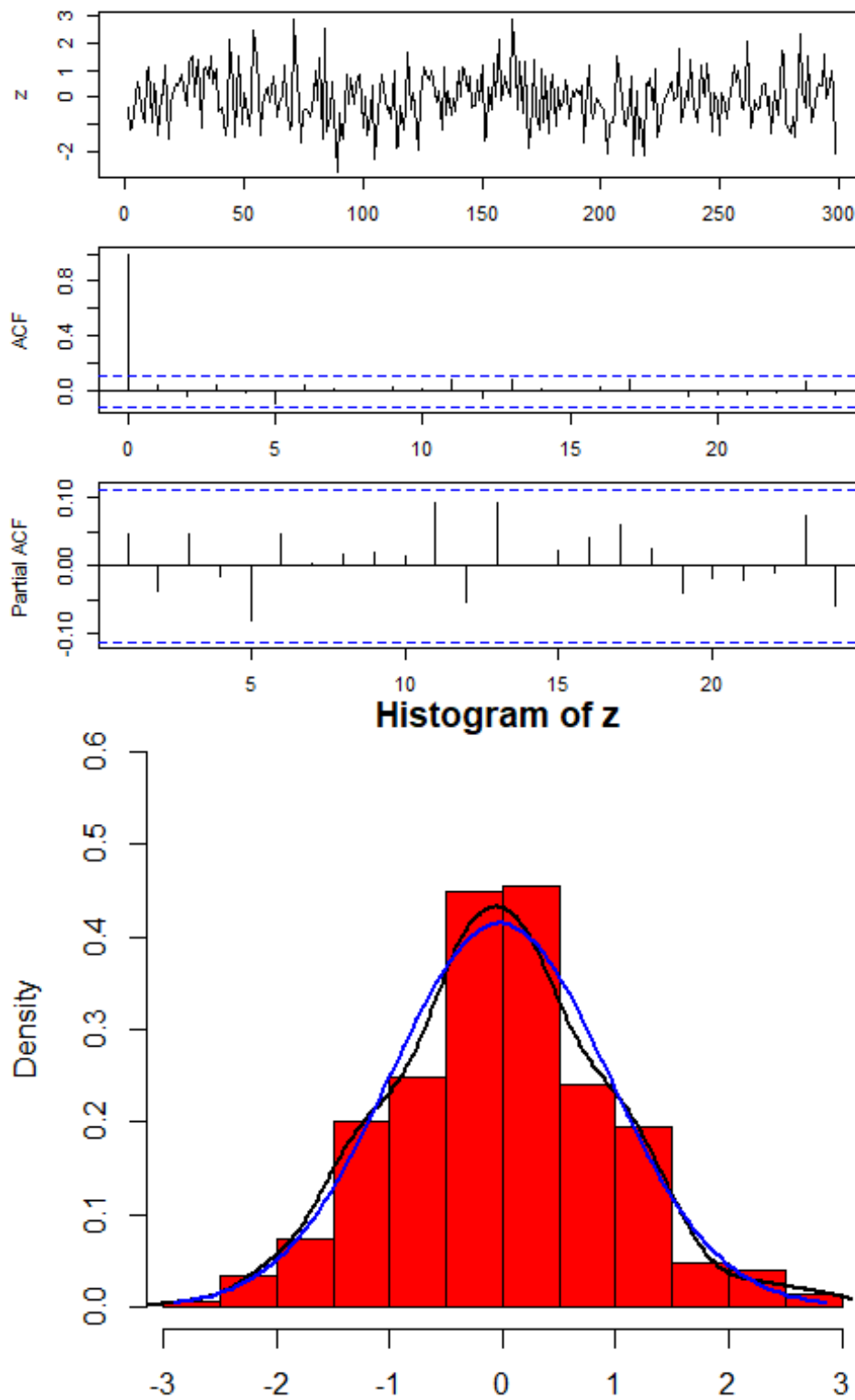
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data: y^2  
## X-squared = 2317.4, df = 20, p-value < 2.2e-16
```

## SERIE 2 DIFF





## Tests Serie 2 Diff

### Mean:

```
## [1] -0.02598662
```

### St Deviation:

```
## [1] 0.9620915
```

### Skewness:

```
## [1] 0.1359436  
## attr(,"method")  
## [1] "moment"
```

### Kurtosis:

```
## [1] 3.096639  
## attr(,"method")  
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 0
```

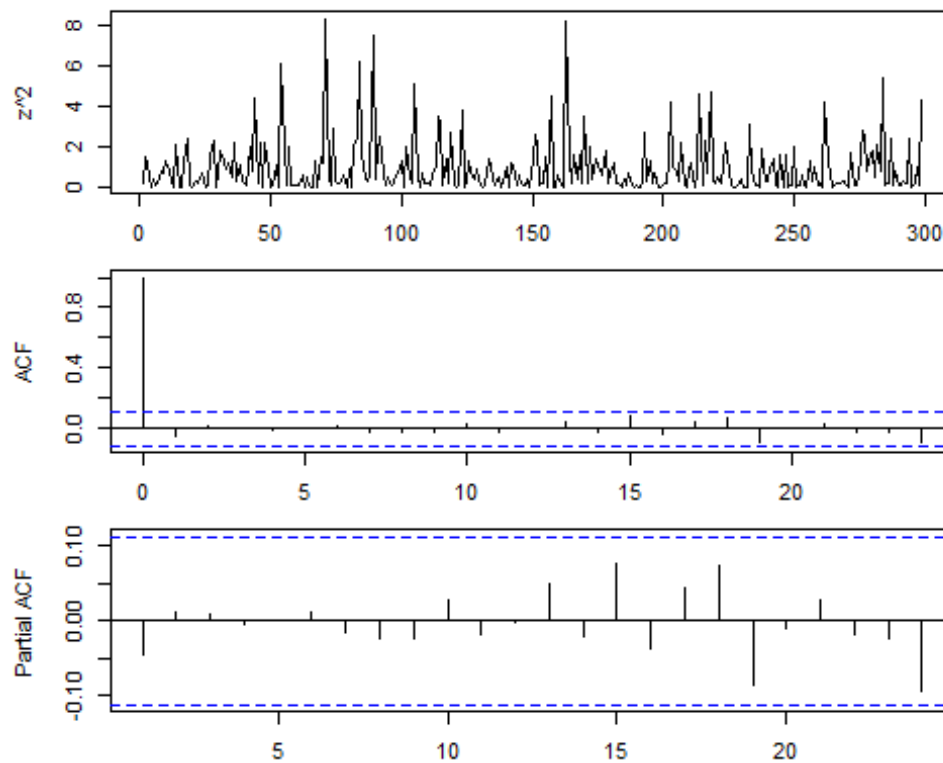
### Shapiro Test:

```
##  
## Shapiro-Wilk normality test  
##  
## data: z  
## W = 0.99619, p-value = 0.69
```

### Box test (Linear correlation):

```
##  
## Box-Ljung test  
##  
## data: z  
## X-squared = 12.452, df = 20, p-value = 0.8996
```

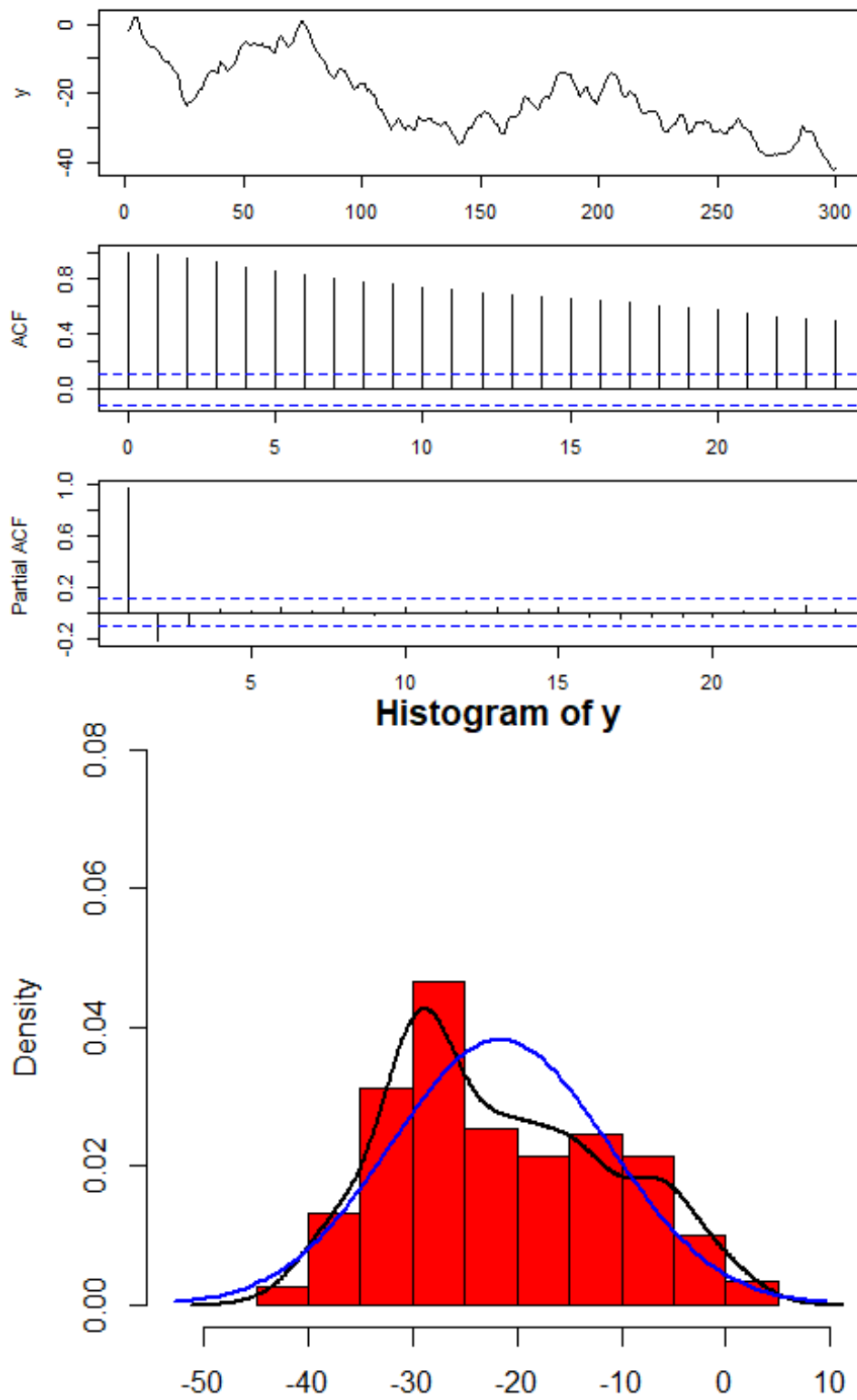
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data:  z^2  
## X-squared = 9.7899, df = 20, p-value = 0.9718
```

### SERIE 3



## Tests Serie 3

### Mean:

```
## [1] -21.65212
```

### St Deviation:

```
## [1] 10.42905
```

### Skewness:

```
## [1] 0.3495993
## attr(,"method")
## [1] "moment"
```

### Kurtosis:

```
## [1] 2.197106
## attr(,"method")
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 1
```

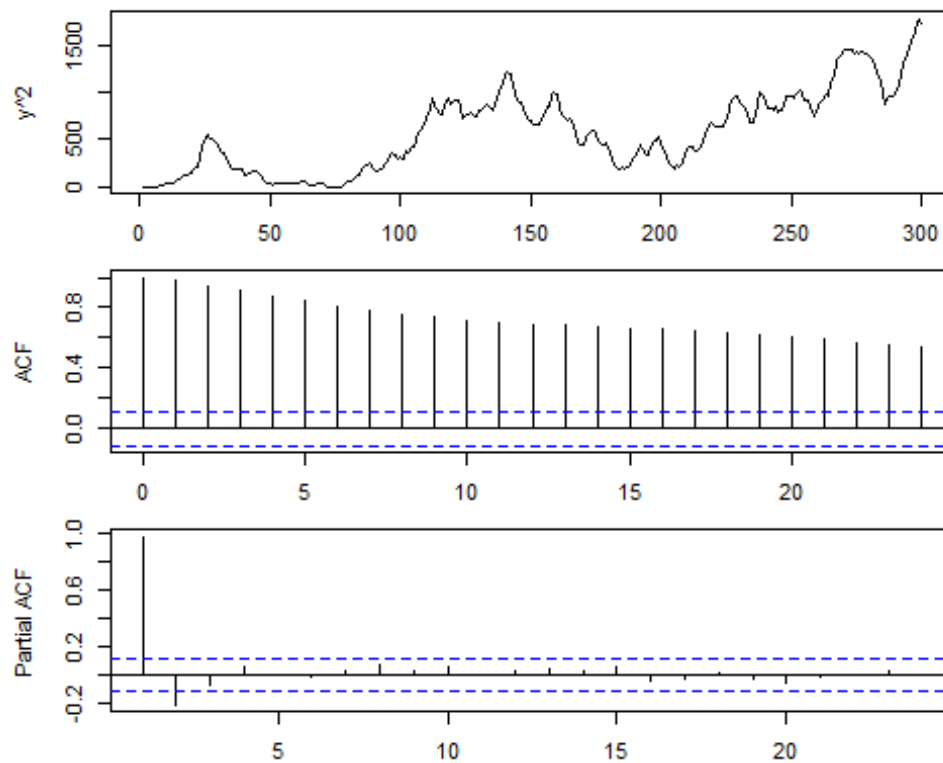
### Shapiro Test:

```
##
##  Shapiro-Wilk normality test
##
## data:  y
## W = 0.9645, p-value = 1.019e-06
```

### Box test (Linear correlation):

```
##
##  Box-Ljung test
##
## data:  y
## X-squared = 3598.9, df = 20, p-value < 2.2e-16
```

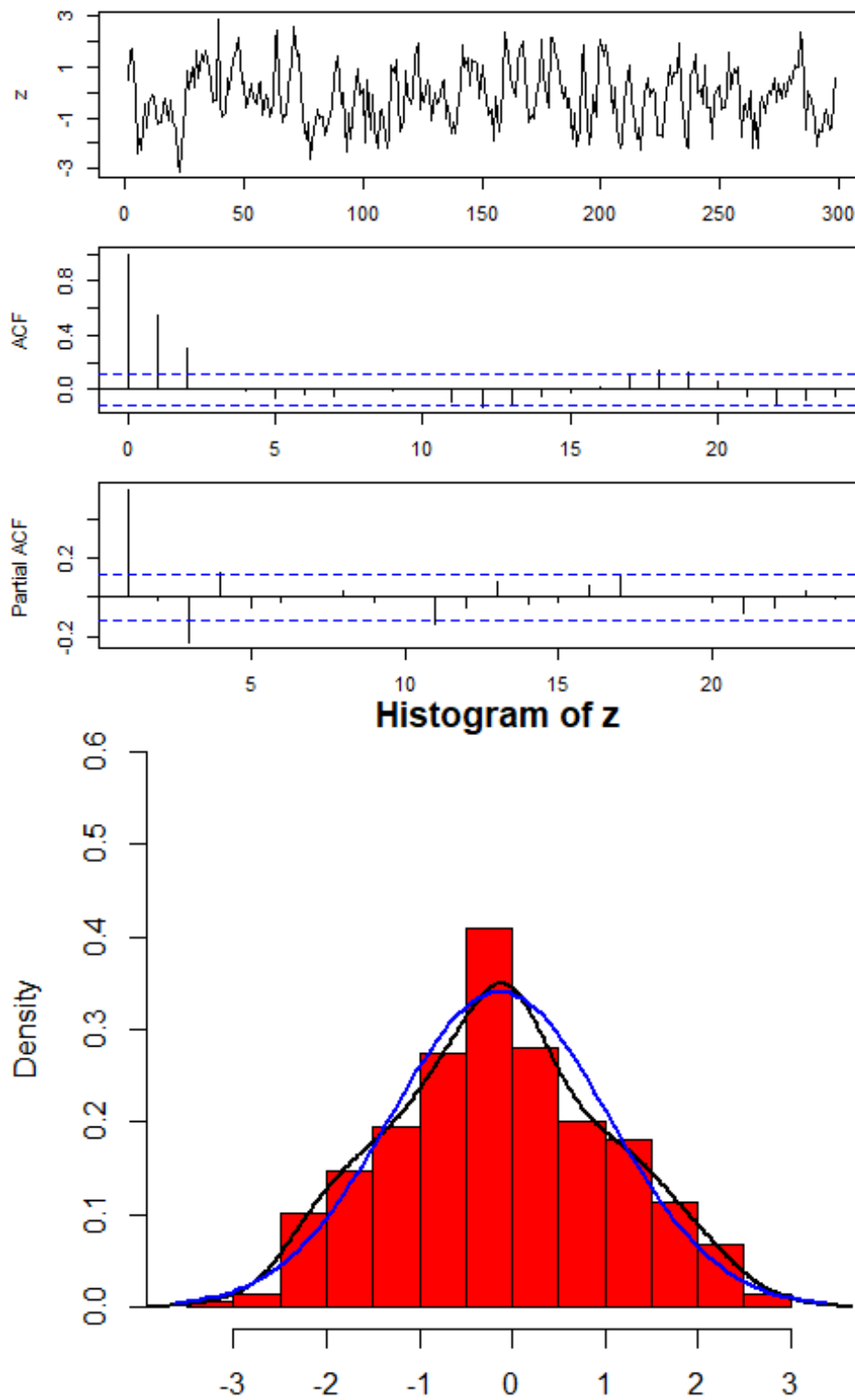
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data: y^2  
## X-squared = 3552, df = 20, p-value < 2.2e-16
```

### SERIE 3 DIFF



## Tests Serie 3 Diff

### Mean:

```
## [1] -0.1338495
```

### St Deviation:

```
## [1] 1.172368
```

### Skewness:

```
## [1] 0.06834054  
## attr(,"method")  
## [1] "moment"
```

### Kurtosis:

```
## [1] 2.523204  
## attr(,"method")  
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 0
```

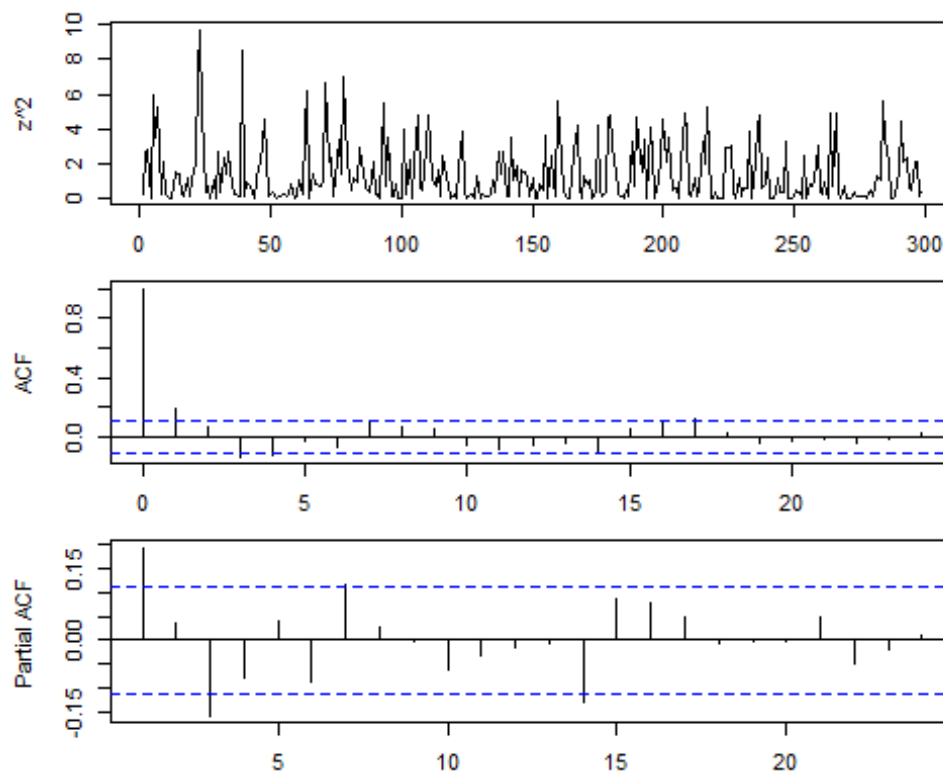
### Shapiro Test:

```
##  
## Shapiro-Wilk normality test  
##  
## data: z  
## W = 0.99344, p-value = 0.2178
```

### Box test (Linear correlation):

```
##  
## Box-Ljung test  
##  
## data: z  
## X-squared = 148.71, df = 20, p-value < 2.2e-16
```

## Analysis of the squared data

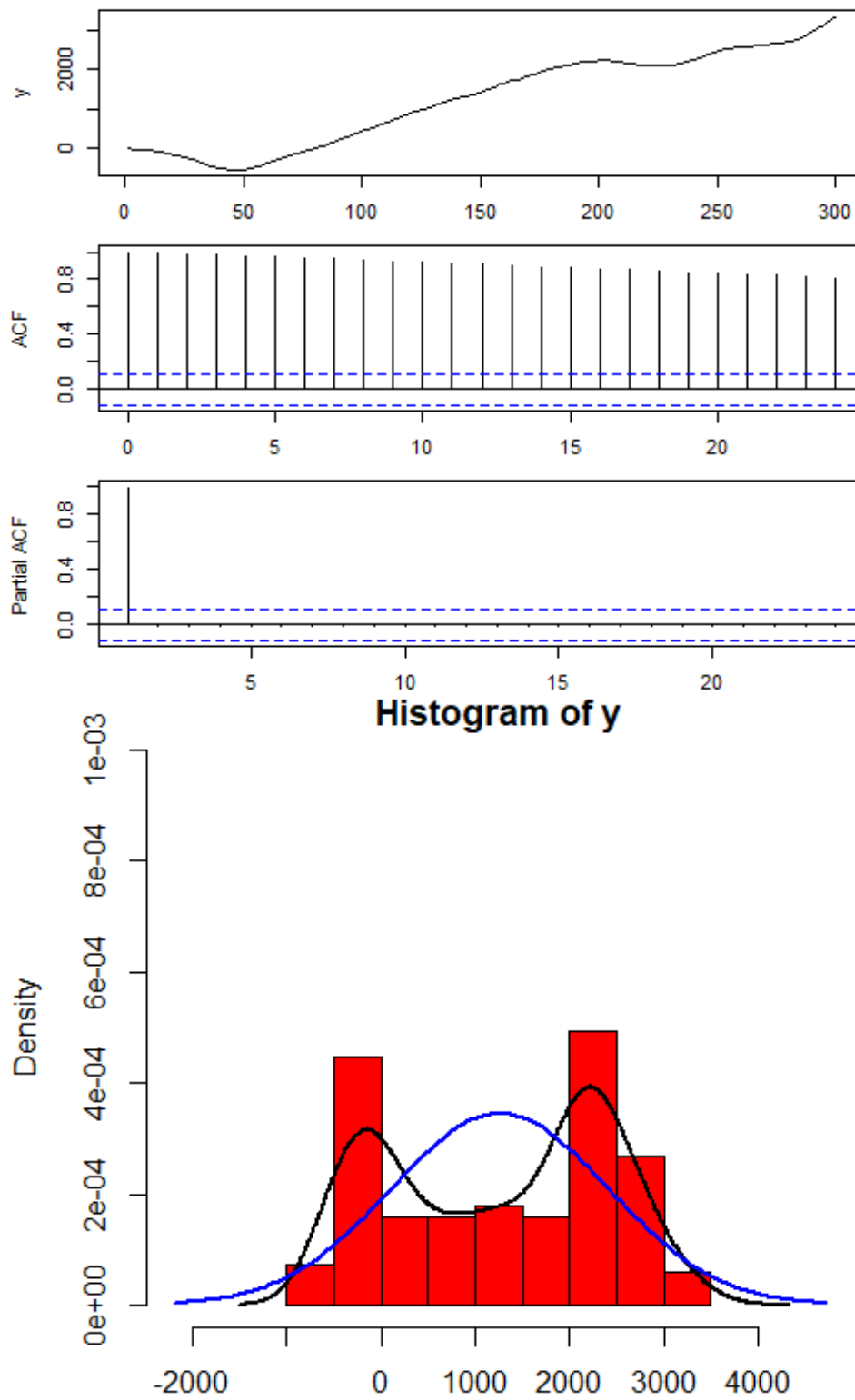


### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data: z^2  
## X-squared = 47.582, df = 20, p-value = 0.0004868
```



## SERIE 4



## Tests Serie 4

### Mean:

```
## [1] 1256.843
```

### St Deviation:

```
## [1] 1154.857
```

### Skewness:

```
## [1] -0.1488262  
## attr(,"method")  
## [1] "moment"
```

### Kurtosis:

```
## [1] 1.559977  
## attr(,"method")  
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 2
```

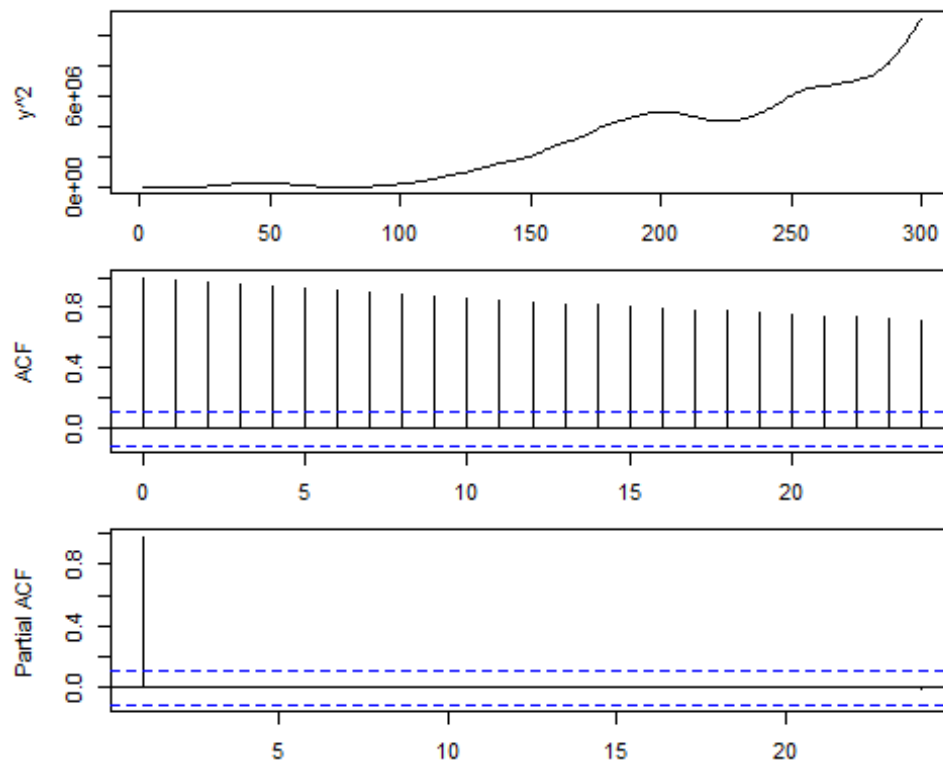
### Shapiro Test:

```
##  
## Shapiro-Wilk normality test  
##  
## data: y  
## W = 0.91161, p-value = 2.779e-12
```

### Box test (Linear correlation):

```
##  
## Box-Ljung test  
##  
## data: y  
## X-squared = 5290.9, df = 20, p-value < 2.2e-16
```

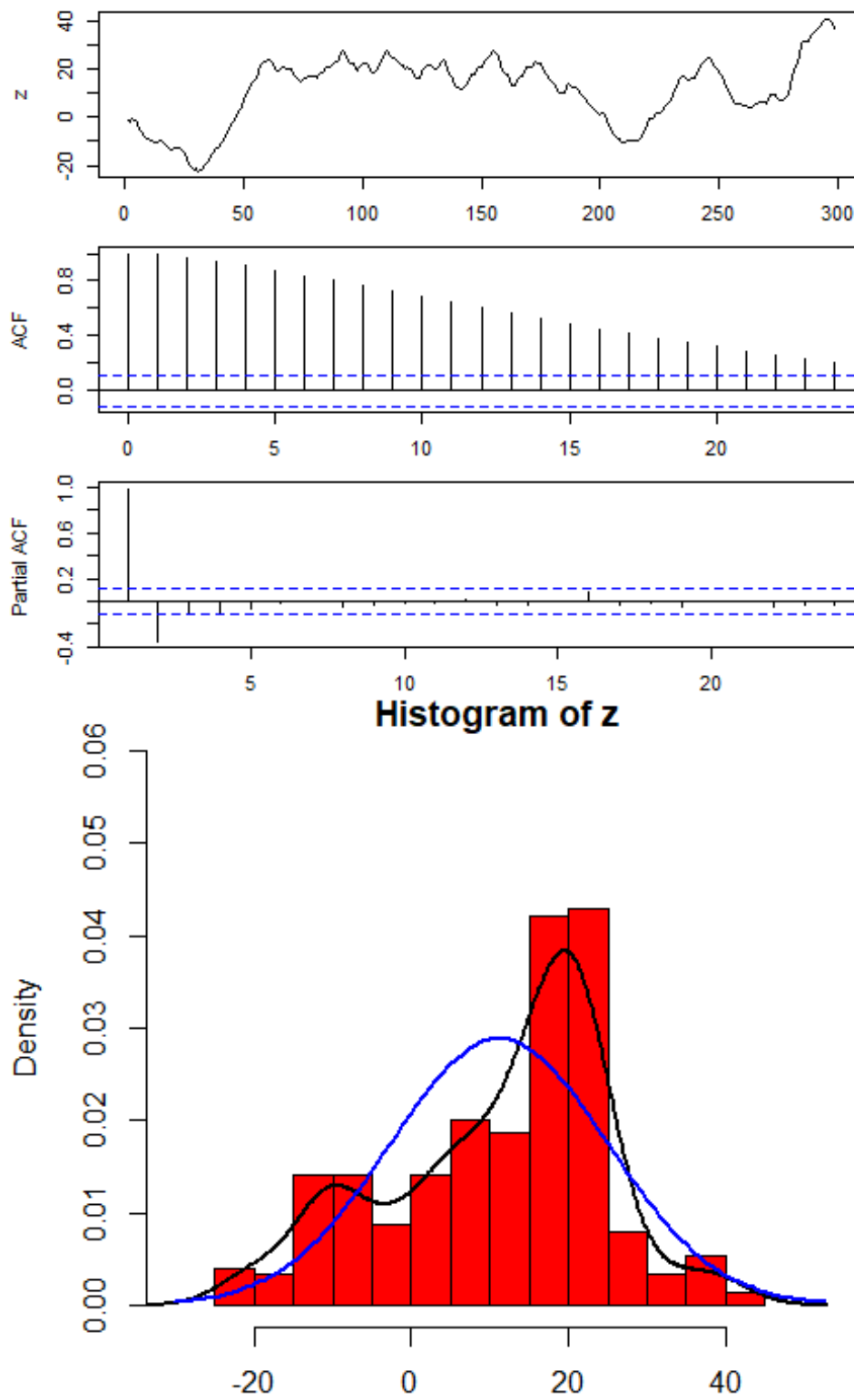
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data: y^2  
## X-squared = 4641.8, df = 20, p-value < 2.2e-16
```

## SERIE 4 DIFF



## Tests Serie 4 Diff

### Mean:

```
## [1] 11.17006
```

### St Deviation:

```
## [1] 13.82722
```

### Skewness:

```
## [1] -0.5206655  
## attr(,"method")  
## [1] "moment"
```

### Kurtosis:

```
## [1] 2.625407  
## attr(,"method")  
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 1
```

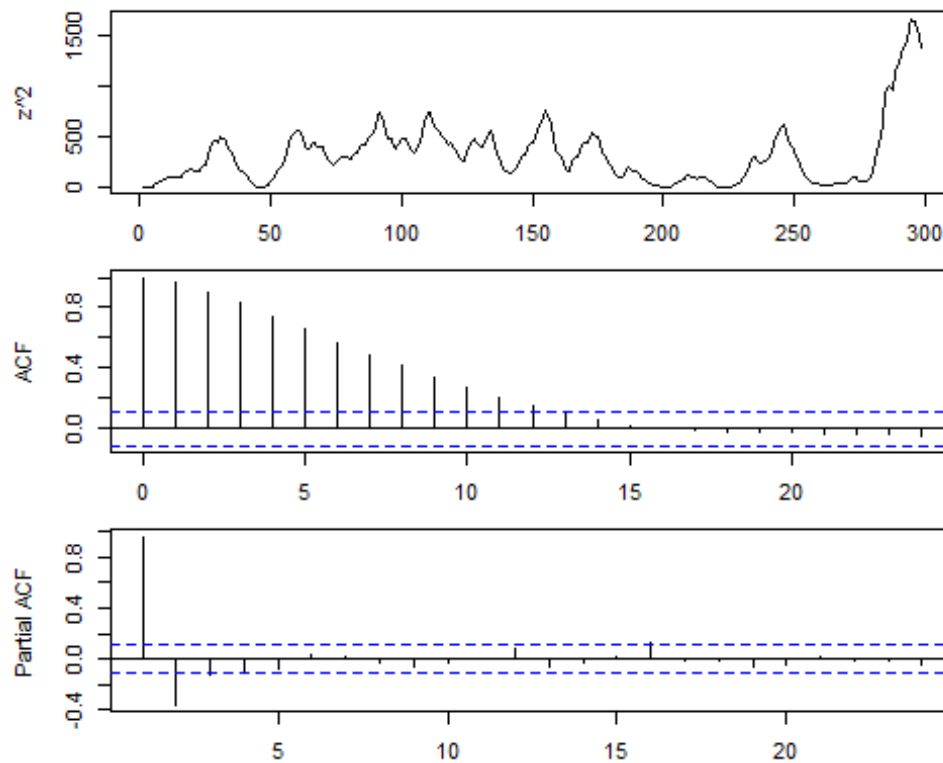
### Shapiro Test:

```
##  
## Shapiro-Wilk normality test  
##  
## data: z  
## W = 0.94851, p-value = 9.871e-09
```

### Box test (Linear correlation):

```
##  
## Box-Ljung test  
##  
## data: z  
## X-squared = 2974.9, df = 20, p-value < 2.2e-16
```

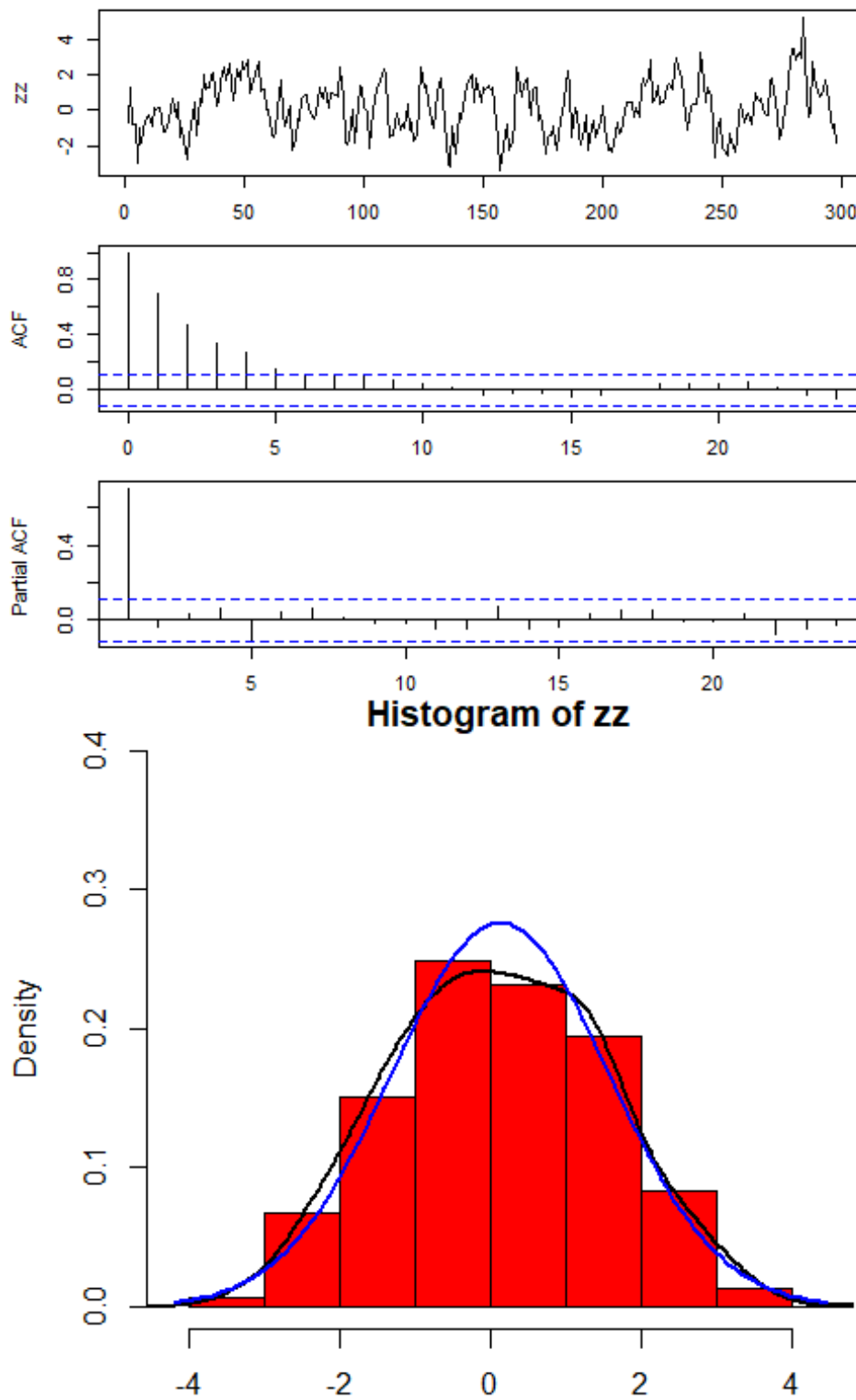
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data:  z^2  
## X-squared = 1354.2, df = 20, p-value < 2.2e-16
```

## SERIE 4 2DIFF



## Tests Serie 4 2Diff

### Mean:

```
## [1] 0.1287819
```

### St Deviation:

```
## [1] 1.445643
```

### Skewness:

```
## [1] 0.1289298  
## attr(,"method")  
## [1] "moment"
```

### Kurtosis:

```
## [1] 2.761813  
## attr(,"method")  
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 0
```

### Shapiro Test:

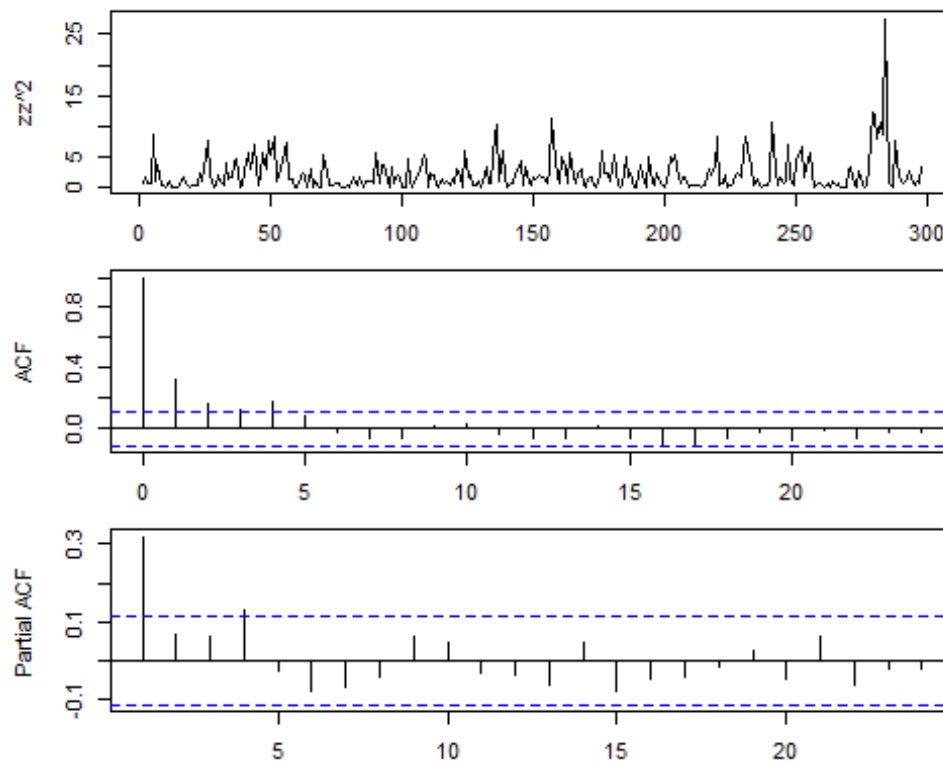
```
##  
## Shapiro-Wilk normality test  
##  
## data: zz  
## W = 0.99438, p-value = 0.3416
```

### Box test (Linear correlation):

```
##  
## Box-Ljung test  
##  
## data: zz  
## X-squared = 297.76, df = 20, p-value < 2.2e-16
```



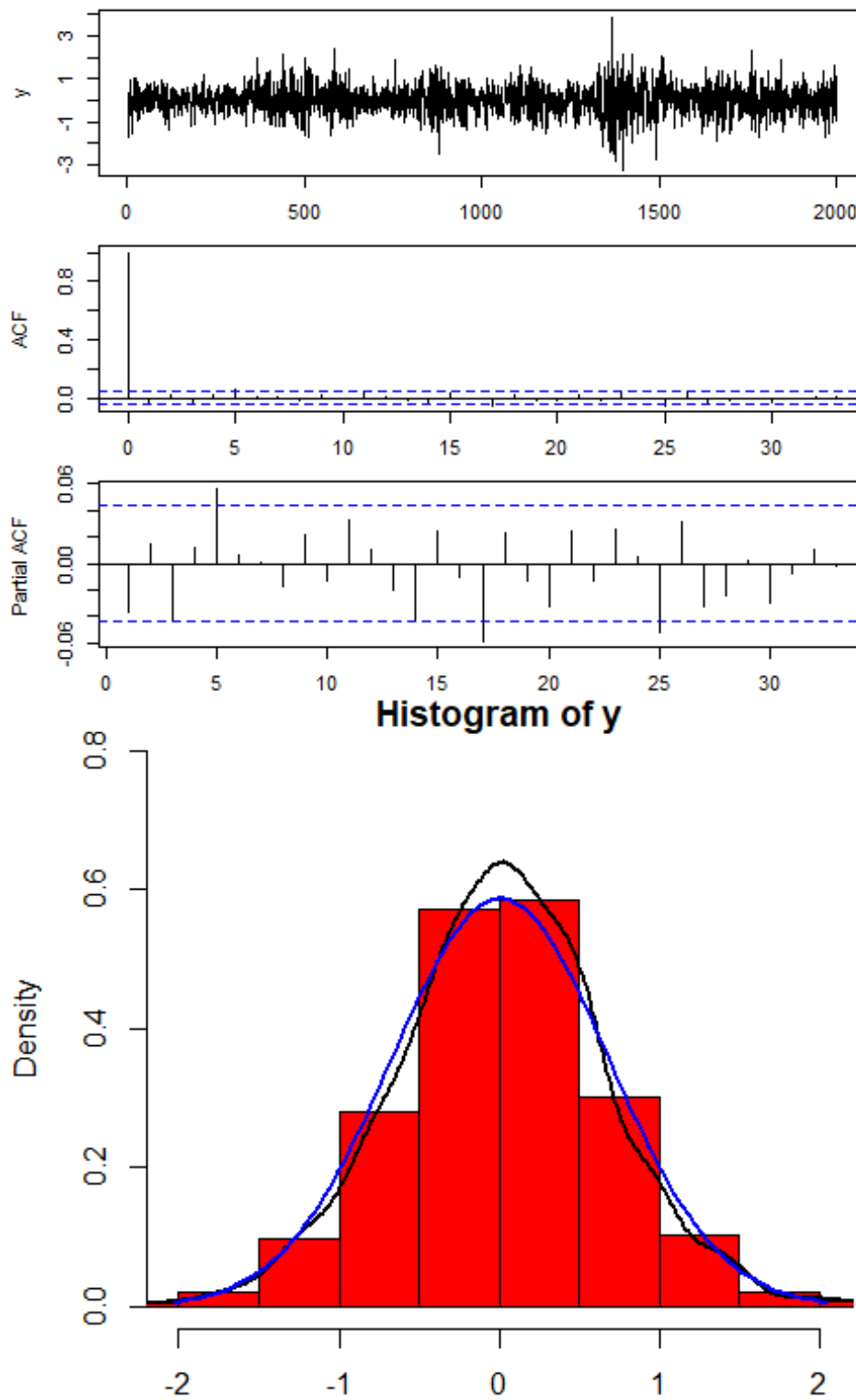
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data:  zz^2  
## X-squared = 72.7, df = 20, p-value = 6.562e-08
```

## SERIE 5



## Tests Serie 5

### Mean:

```
## [1] 0.0071755
```

### St Deviation:

```
## [1] 0.6797896
```

### Skewness:

```
## [1] -0.08744834
## attr(,"method")
## [1] "moment"
```

### Kurtosis:

```
## [1] 4.36924
## attr(,"method")
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 0
```

### Shapiro Test:

```
##
##  Shapiro-Wilk normality test
##
## data:  y
## W = 0.99047, p-value = 3.456e-10
```

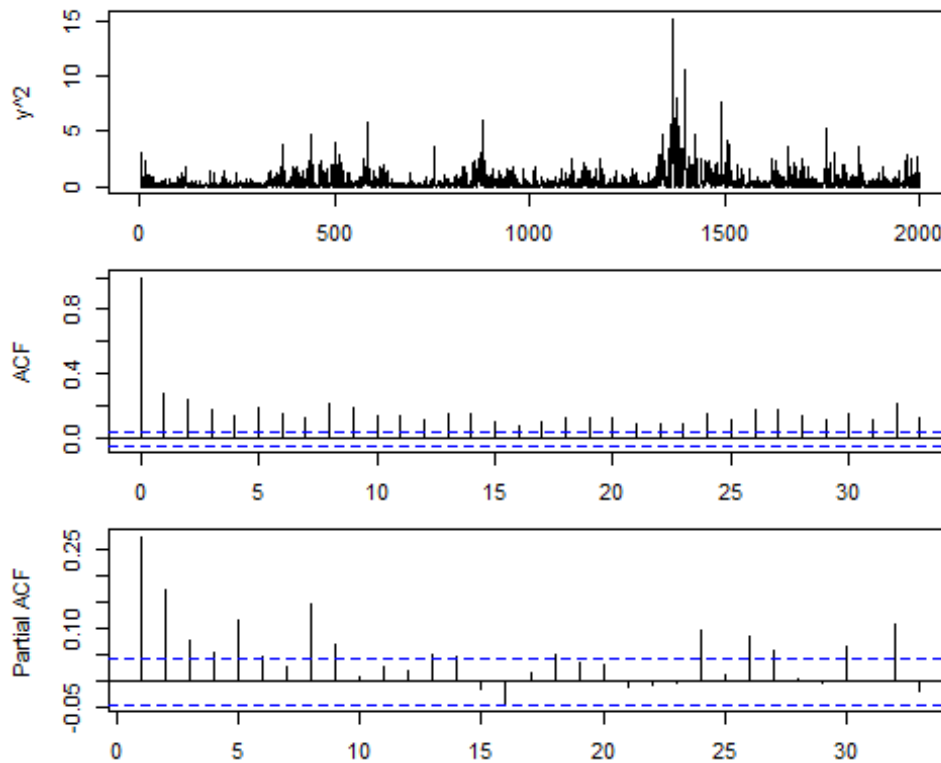
### Box test (Linear correlation)Lag=20:

```
##
##  Box-Ljung test
##
## data:  y
## X-squared = 33.151, df = 20, p-value = 0.03248
```

### Box test (Linear correlation) Lag=10:

```
##
##  Box-Ljung test
##
## data:  y
## X-squared = 15.852, df = 10, p-value = 0.1039
```

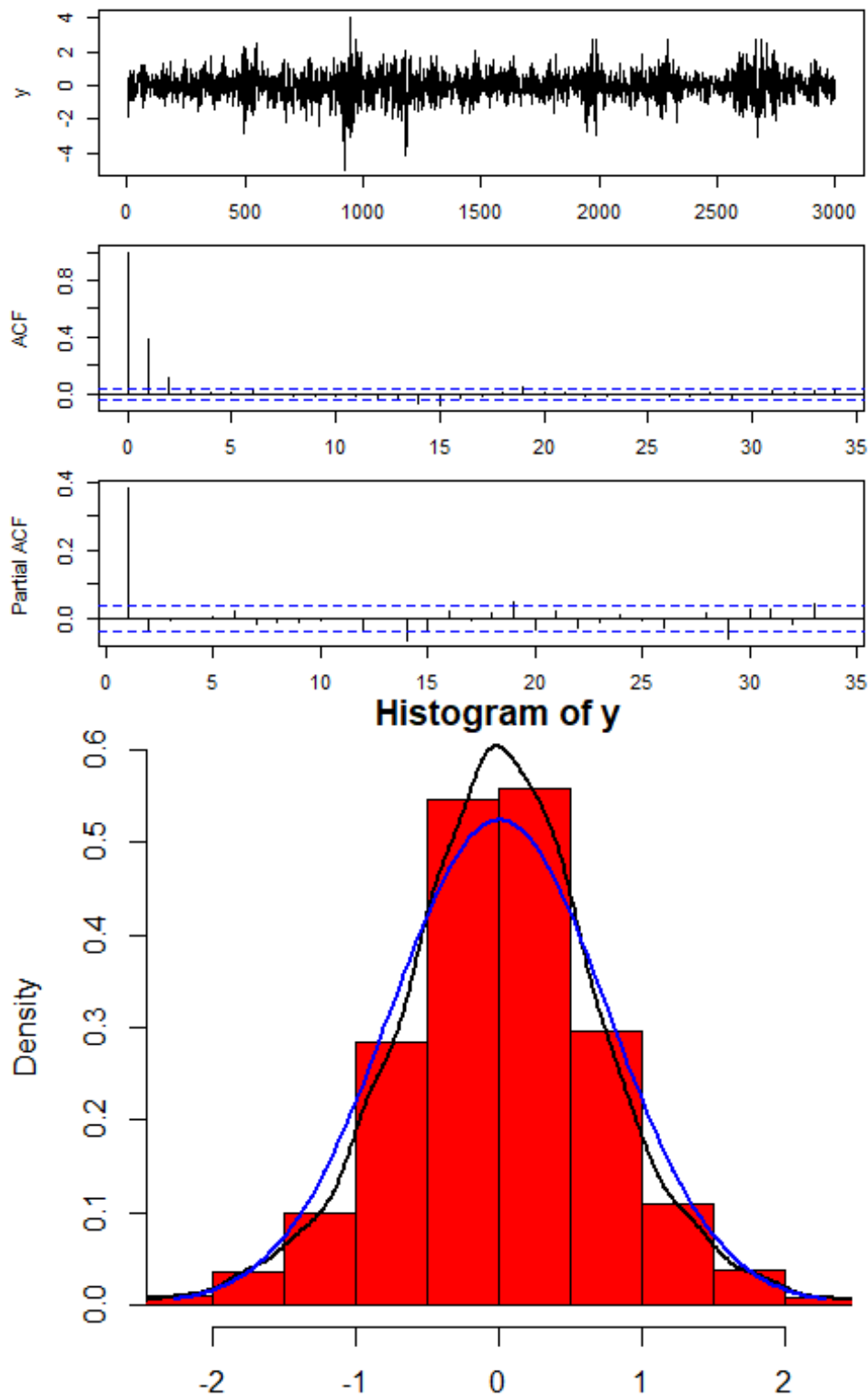
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data: y^2  
## X-squared = 1061.5, df = 20, p-value < 2.2e-16
```

## SERIE 6



## Tests Serie 6

### Mean:

```
## [1] 0.007541
```

### St Deviation:

```
## [1] 0.7605913
```

### Skewness:

```
## [1] -0.2023789
## attr(,"method")
## [1] "moment"
```

### Kurtosis:

```
## [1] 5.113352
## attr(,"method")
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 0
```

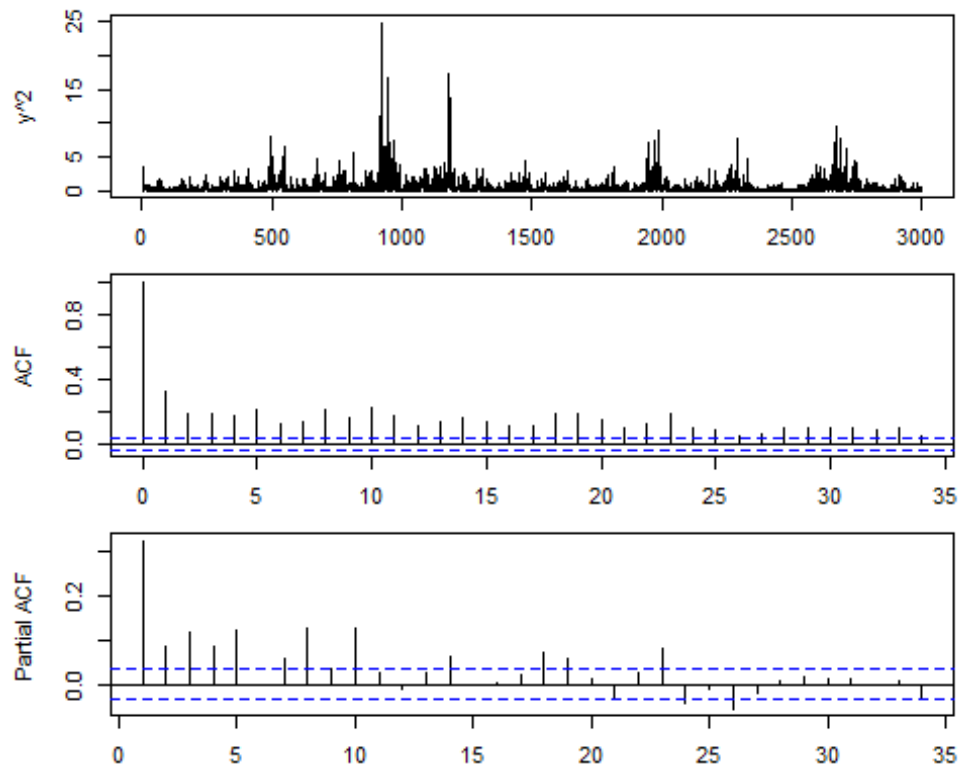
### Shapiro Test:

```
##
##  Shapiro-Wilk normality test
##
## data:  y
## W = 0.98338, p-value < 2.2e-16
```

### Box test (Linear correlation):

```
##
##  Box-Ljung test
##
## data:  y
## X-squared = 537.69, df = 20, p-value < 2.2e-16
```

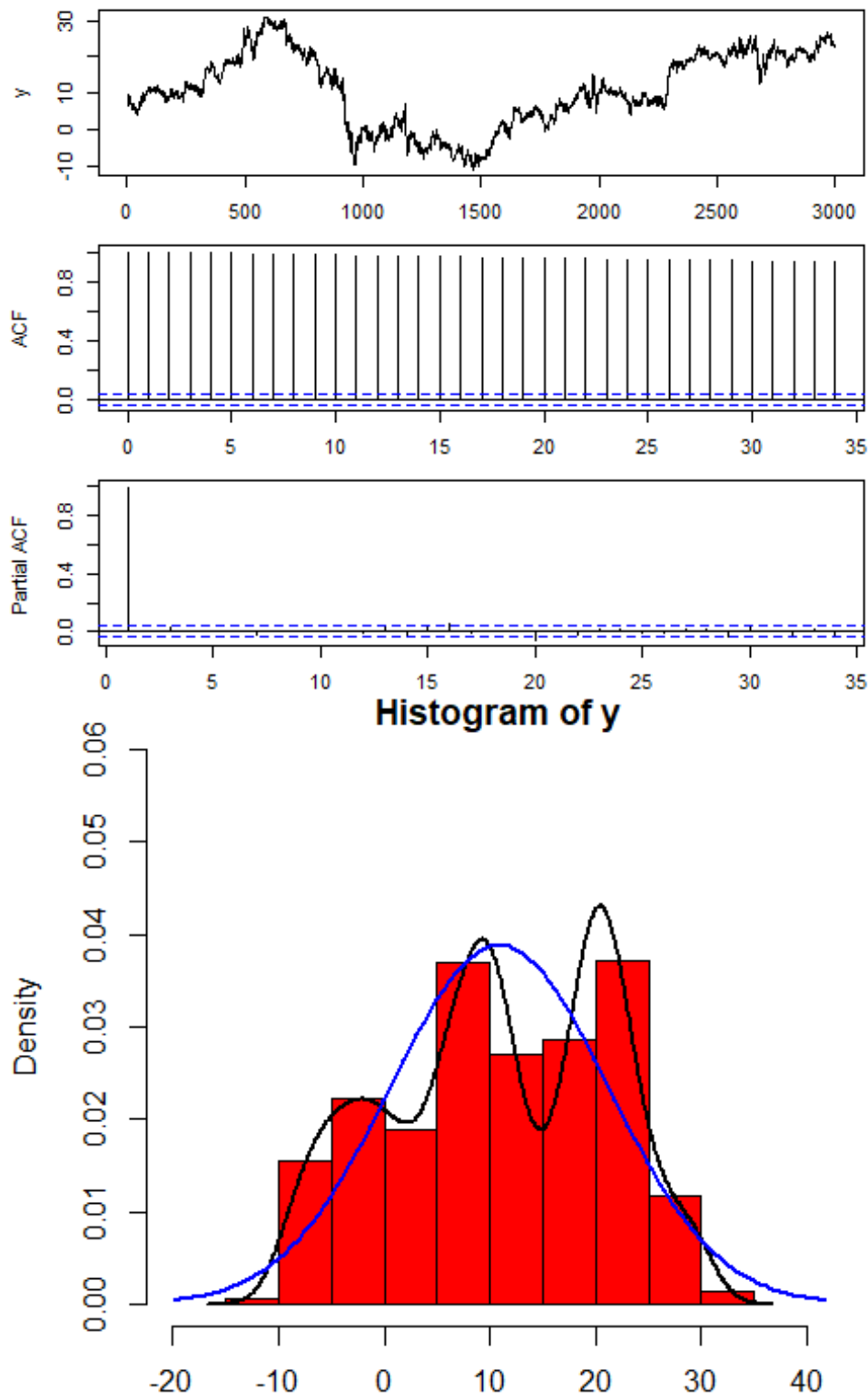
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data: y^2  
## X-squared = 1856.6, df = 20, p-value < 2.2e-16
```

## SERIE 7





## Tests Serie 7

### Mean:

```
## [1] 10.88196
```

### St Deviation:

```
## [1] 10.28588
```

### Skewness:

```
## [1] -0.1702387
## attr(,"method")
## [1] "moment"
```

### Kurtosis:

```
## [1] 2.00975
## attr(,"method")
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 1
```

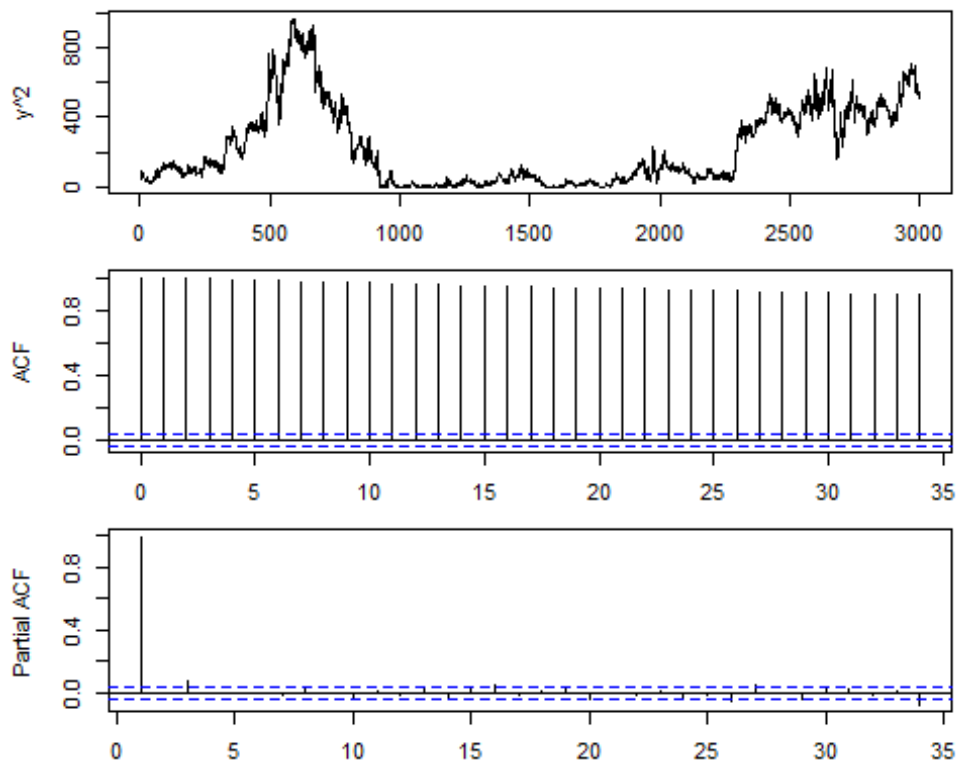
### Shapiro Test:

```
##
##  Shapiro-Wilk normality test
##
## data:  y
## W = 0.96711, p-value < 2.2e-16
```

### Box test (Linear correlation):

```
##
##  Box-Ljung test
##
## data:  y
## X-squared = 57372, df = 20, p-value < 2.2e-16
```

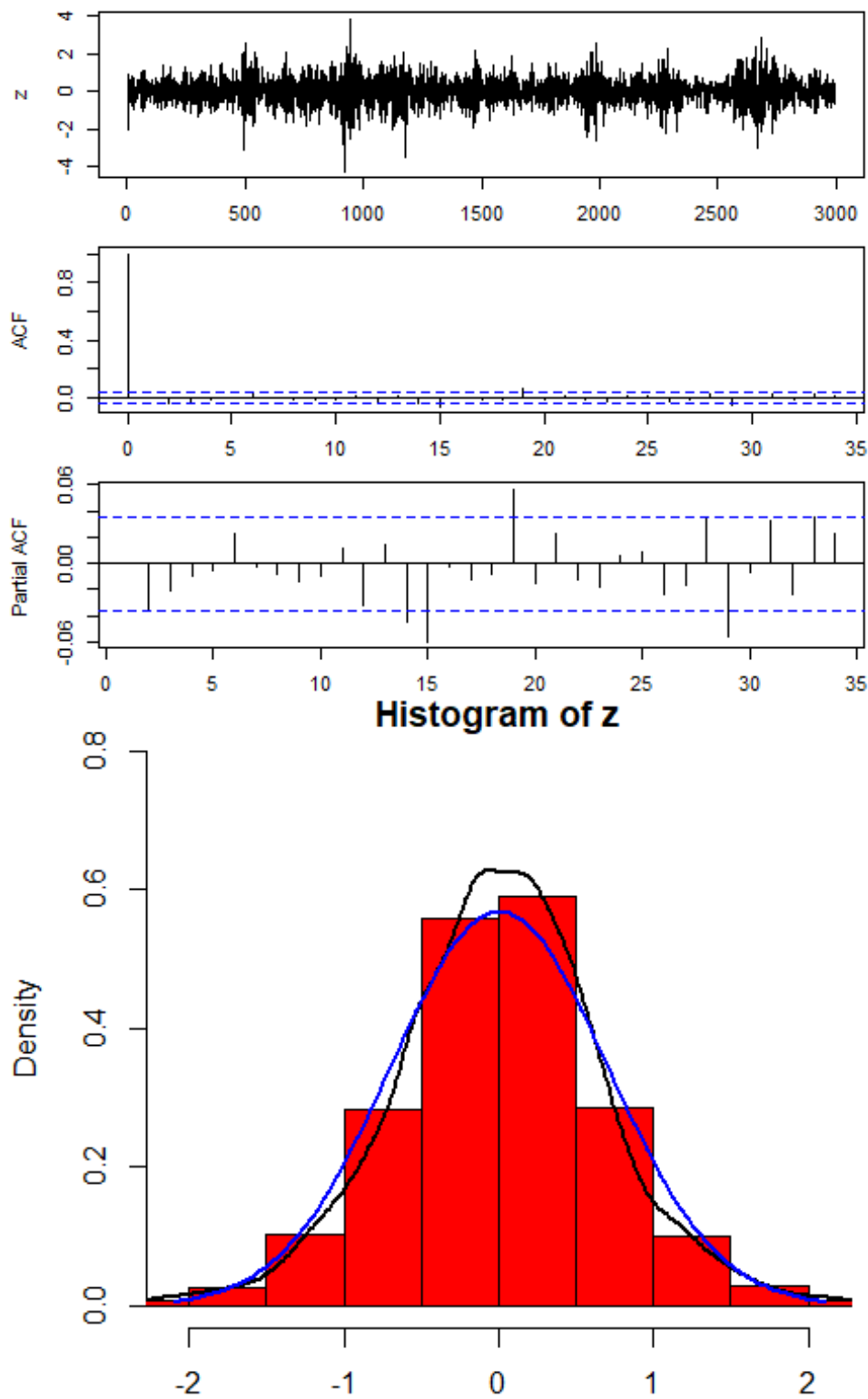
## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data: y^2  
## X-squared = 55788, df = 20, p-value < 2.2e-16
```

## SERIE 7 DIFF



## Tests Serie 7 Diff

### Mean:

```
## [1] 0.004649883
```

### St Deviation:

```
## [1] 0.7023493
```

### Skewness:

```
## [1] -0.1525146
## attr(,"method")
## [1] "moment"
```

### Kurtosis:

```
## [1] 4.823746
## attr(,"method")
## [1] "moment"
```

### Dickey Fuller:

```
## [1] 0
```

### Shapiro Test:

```
##
##  Shapiro-Wilk normality test
##
## data:  z
## W = 0.98584, p-value < 2.2e-16
```

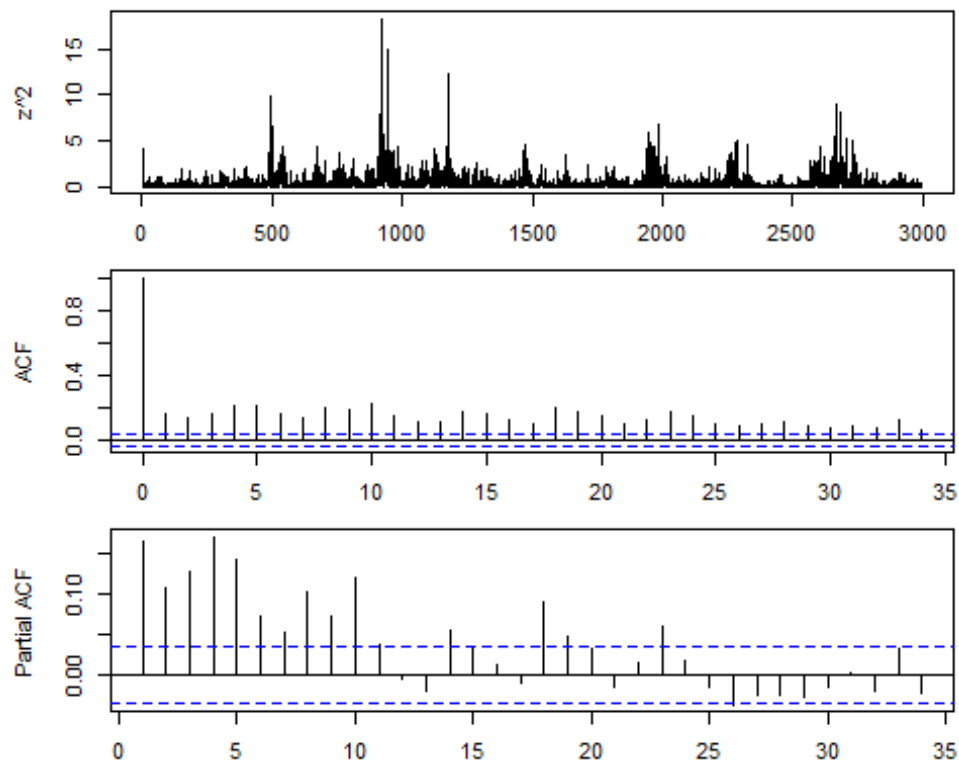
### Box test (Linear correlation) Lag=20:

```
##
##  Box-Ljung test
##
## data:  z
## X-squared = 40.012, df = 20, p-value = 0.004978
```

### Box test (Linear correlation) Lag =10:

```
##
##  Box-Ljung test
##
## data:  z
## X-squared = 8.2319, df = 10, p-value = 0.6062
```

## Analysis of the squared data



### Box test (Squared correlation):

```
##  
## Box-Ljung test  
##  
## data: z^2  
## X-squared = 1632.1, df = 20, p-value < 2.2e-16
```