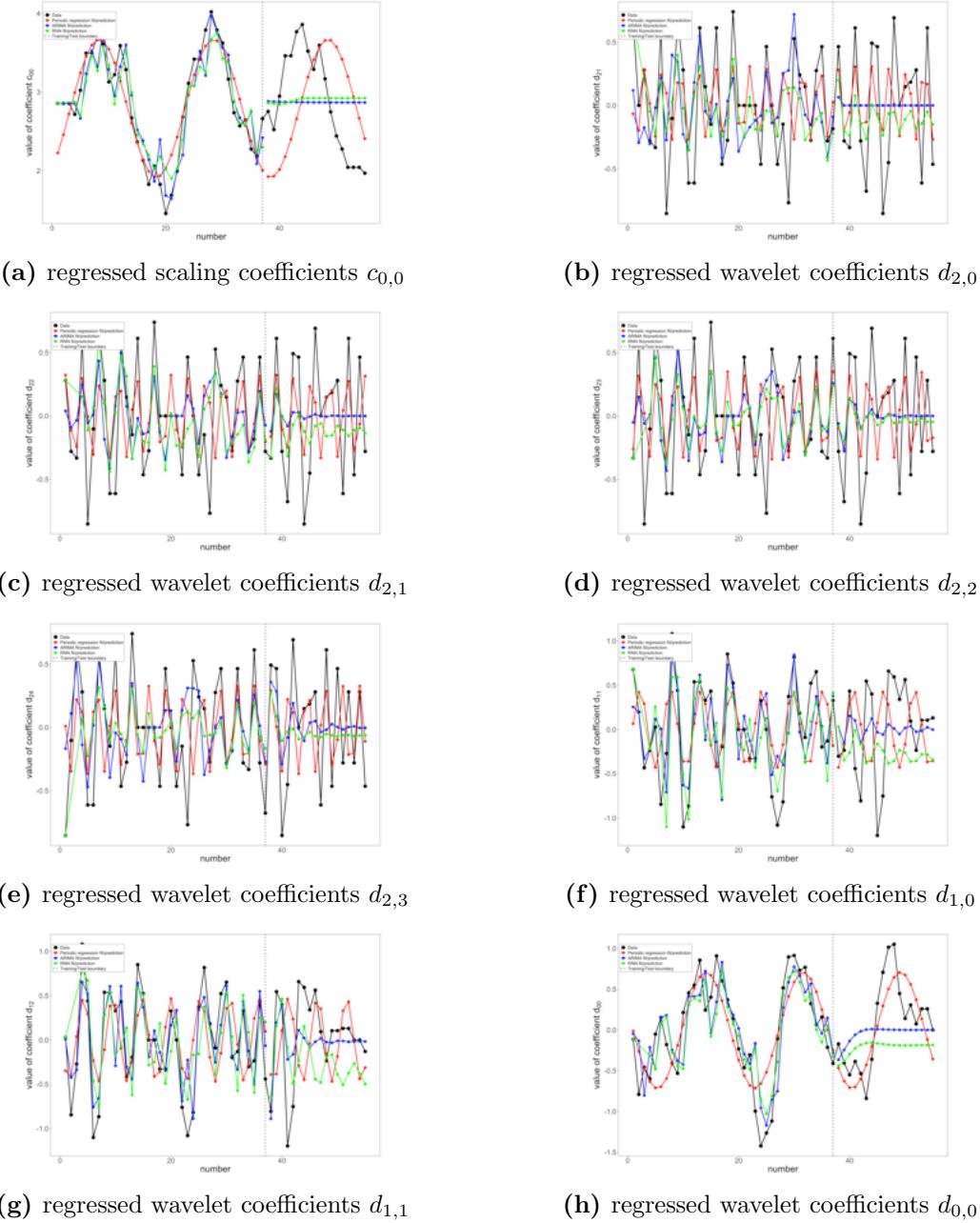
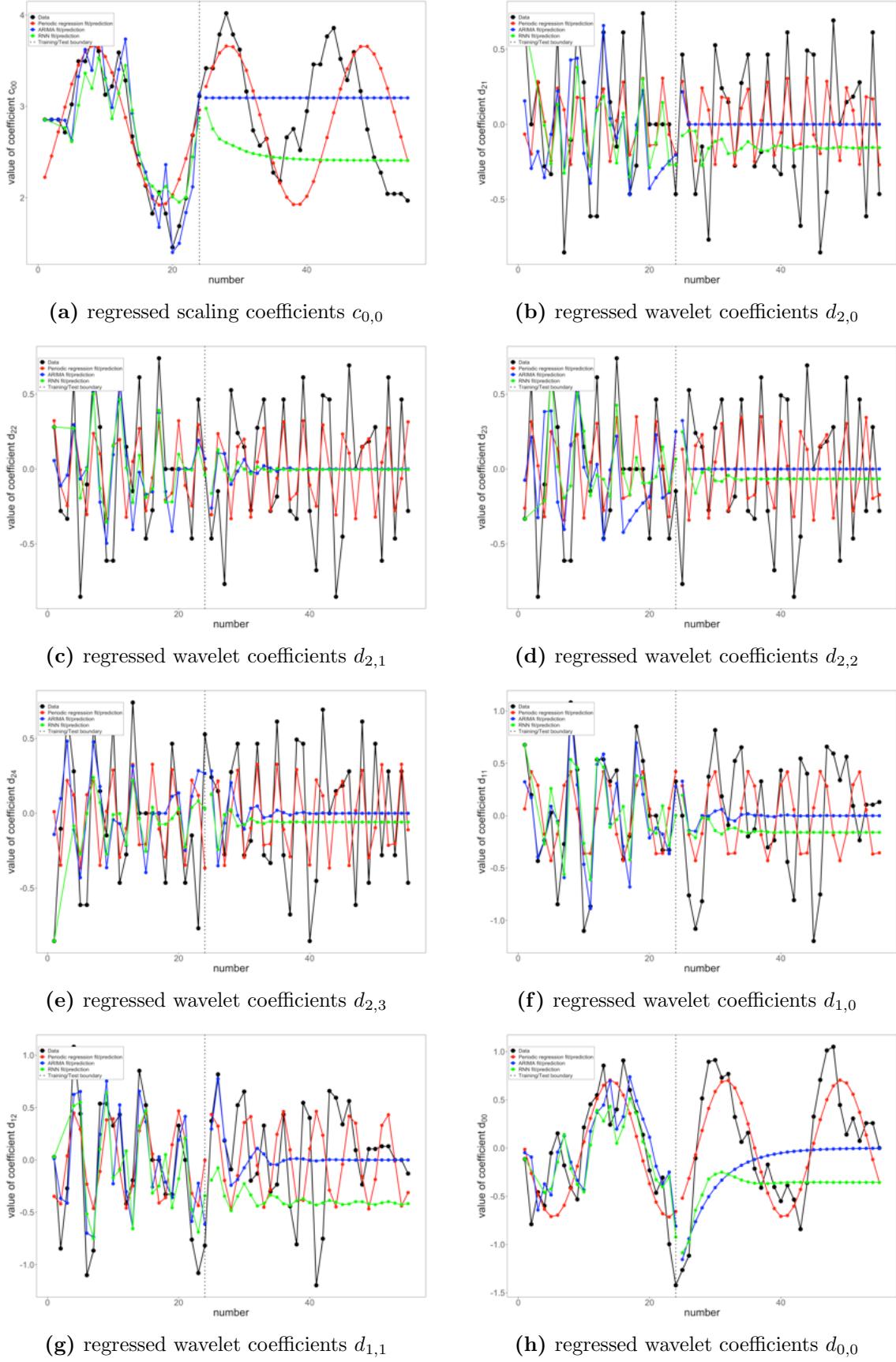


# Regression results in SWWSP

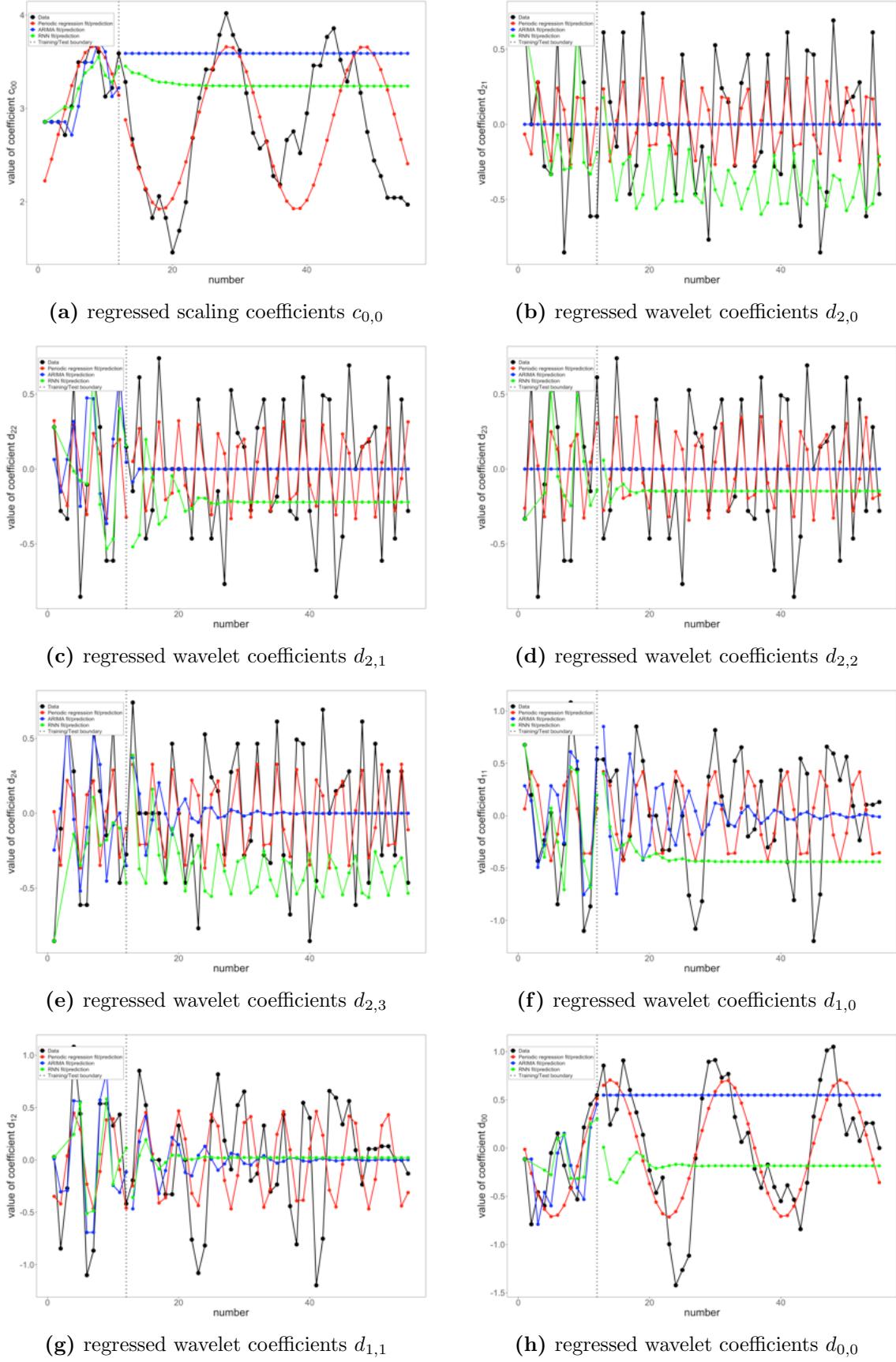
The black line indicates data and black dots indicates training/validation boundary. The red line is periodic regression result/prediction. The blue line is ARIMA fit result/prediction. The green line is RNN fit result/prediction.



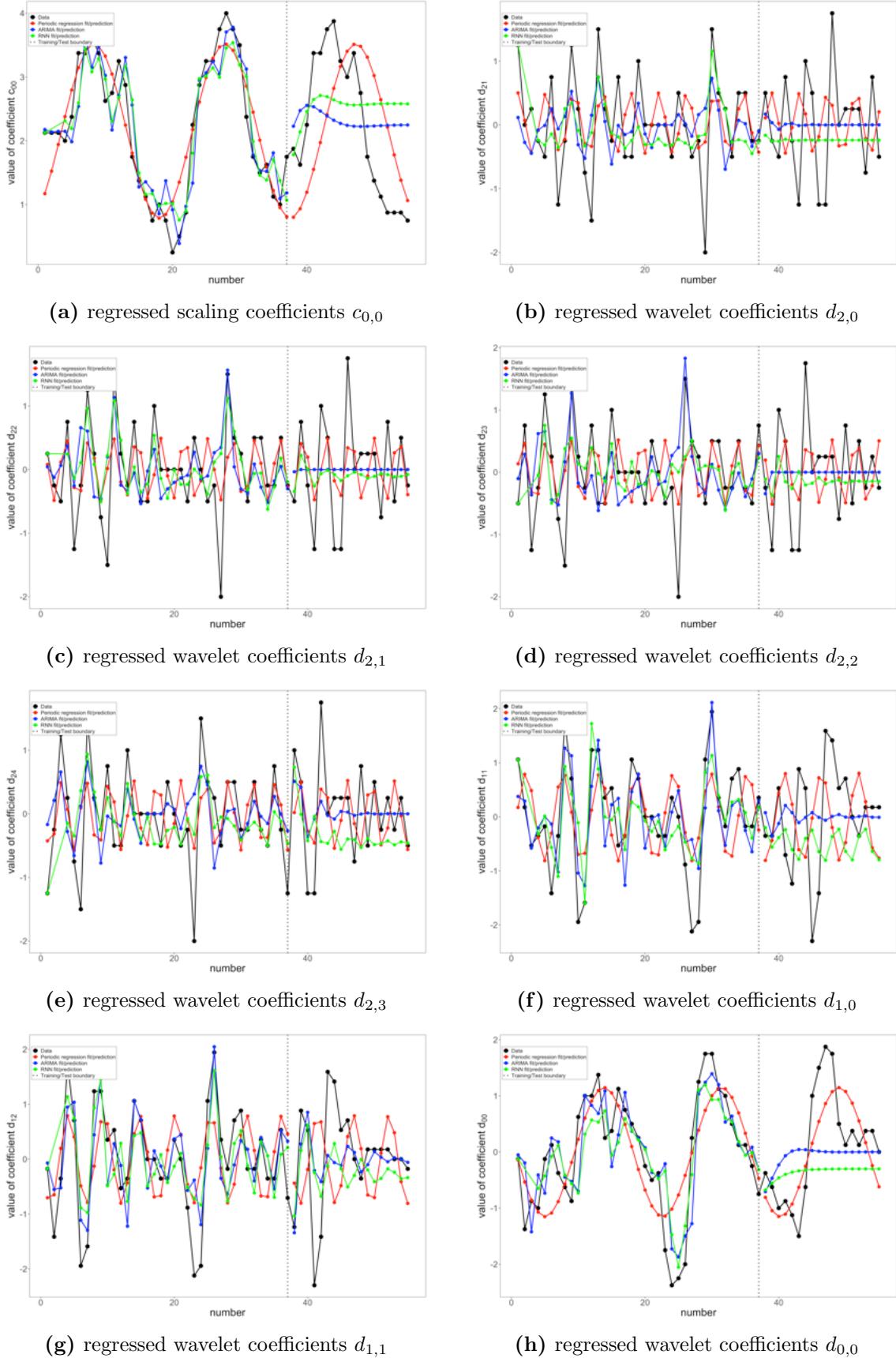
**Fig .1:** Regression result (dt, 70%, DS1)



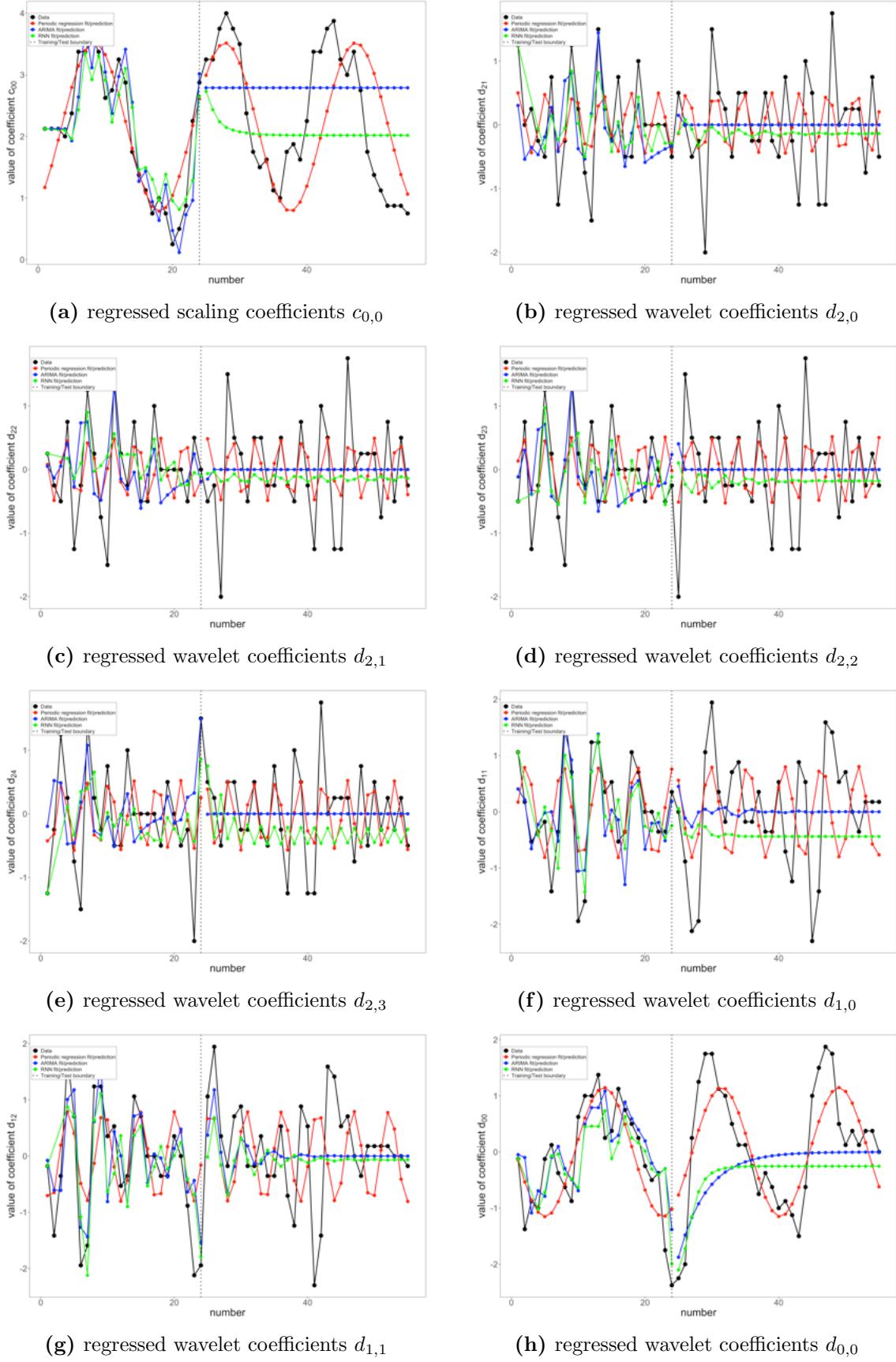
**Fig .2:** Regression result (dt, 50%, DS1)



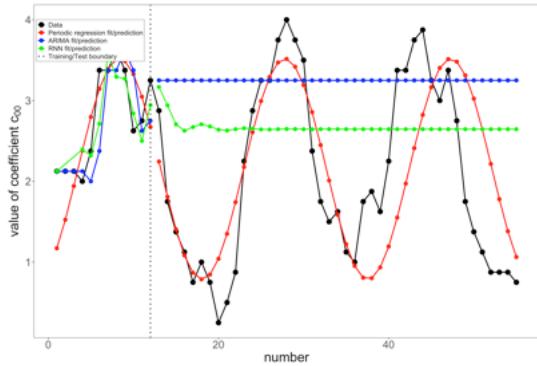
**Fig .3:** Regression result (dt, 30%, DS1)



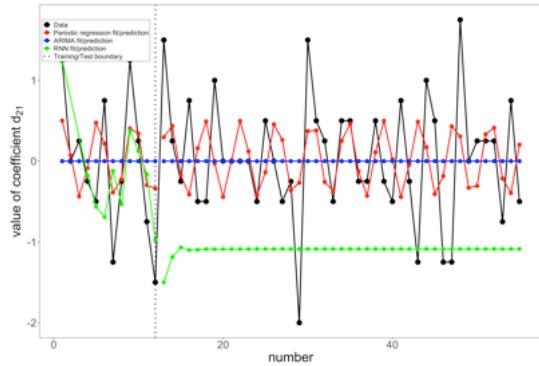
**Fig .4:** Regression result (ndt, 70%, DS1)



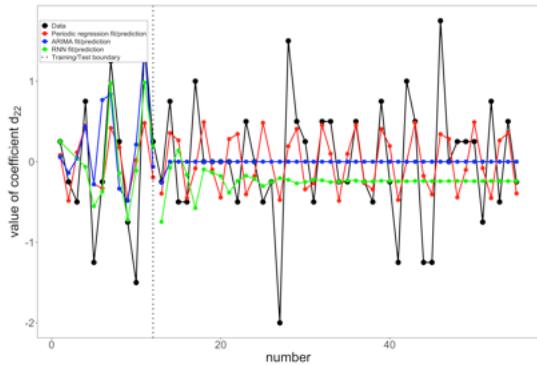
**Fig .5:** Regression result (ndt, 50%, DS1)



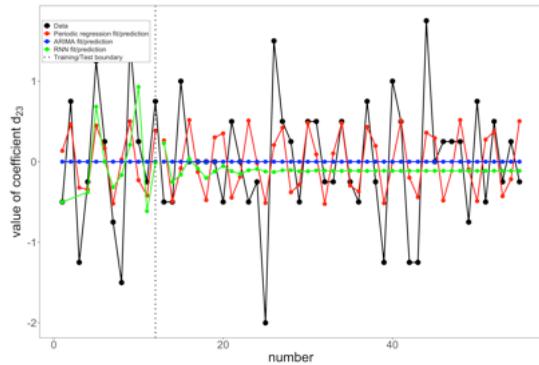
(a) regressed scaling coefficients  $c_{0,0}$



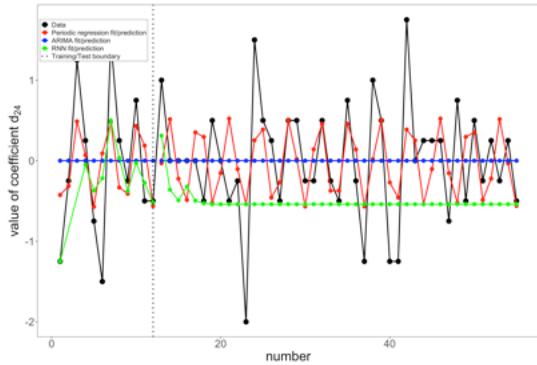
(b) regressed wavelet coefficients  $d_{2,0}$



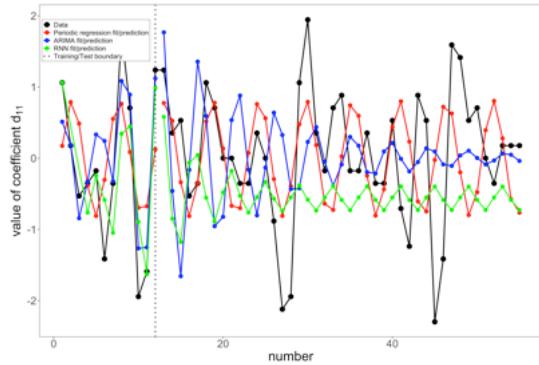
(c) regressed wavelet coefficients  $d_{2,1}$



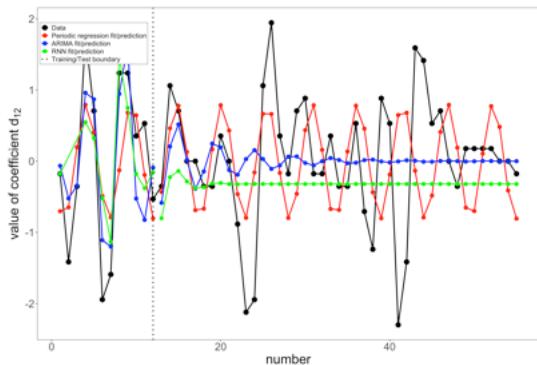
(d) regressed wavelet coefficients  $d_{2,2}$



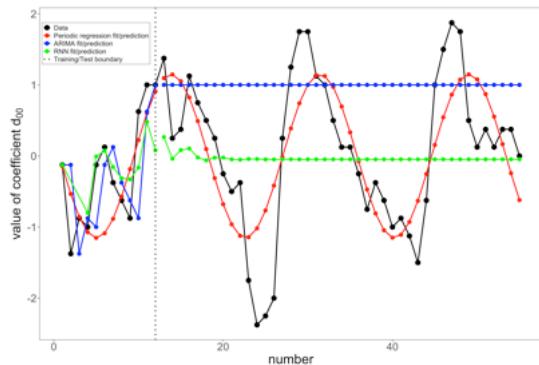
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

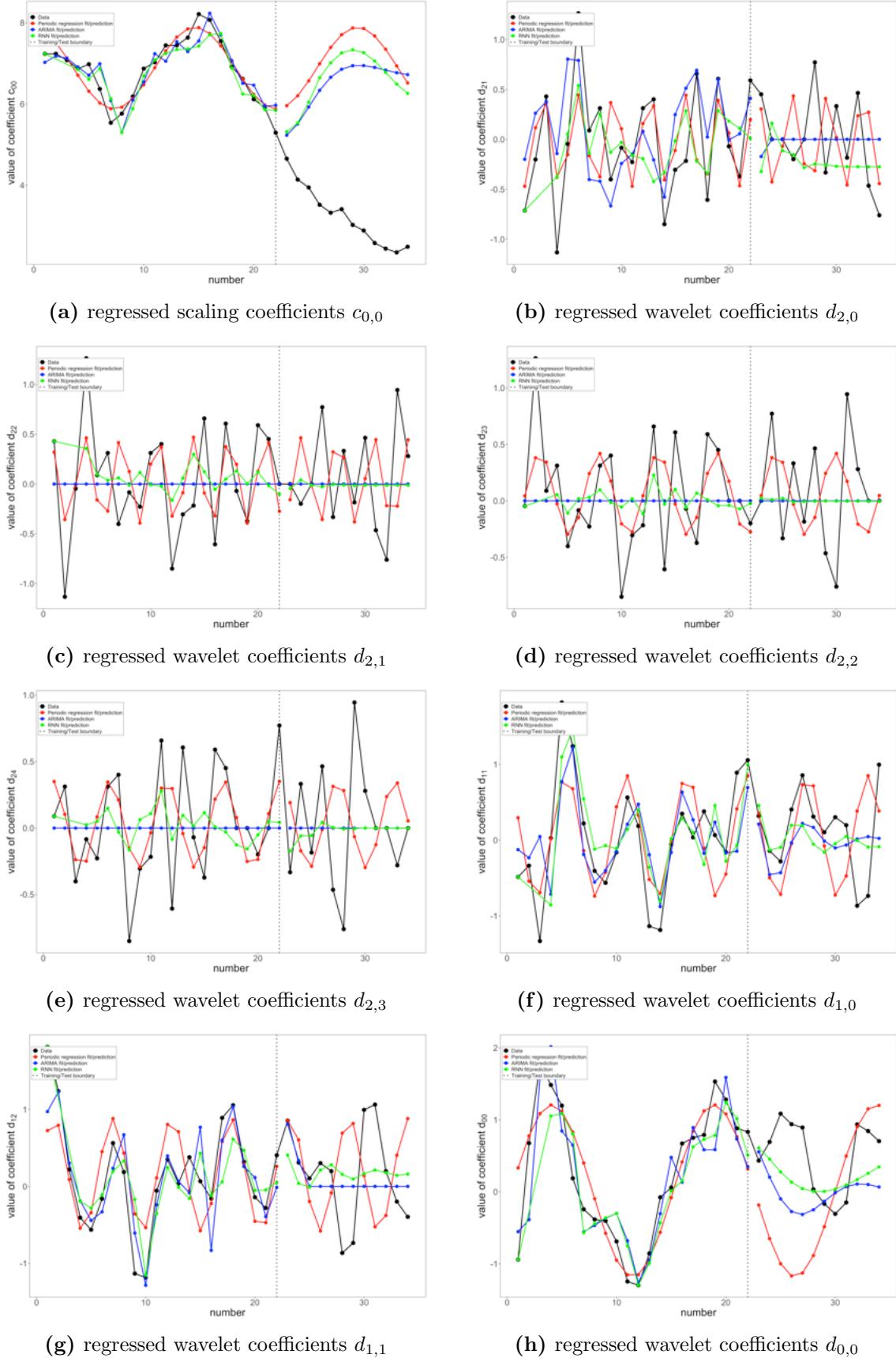


(g) regressed wavelet coefficients  $d_{1,1}$

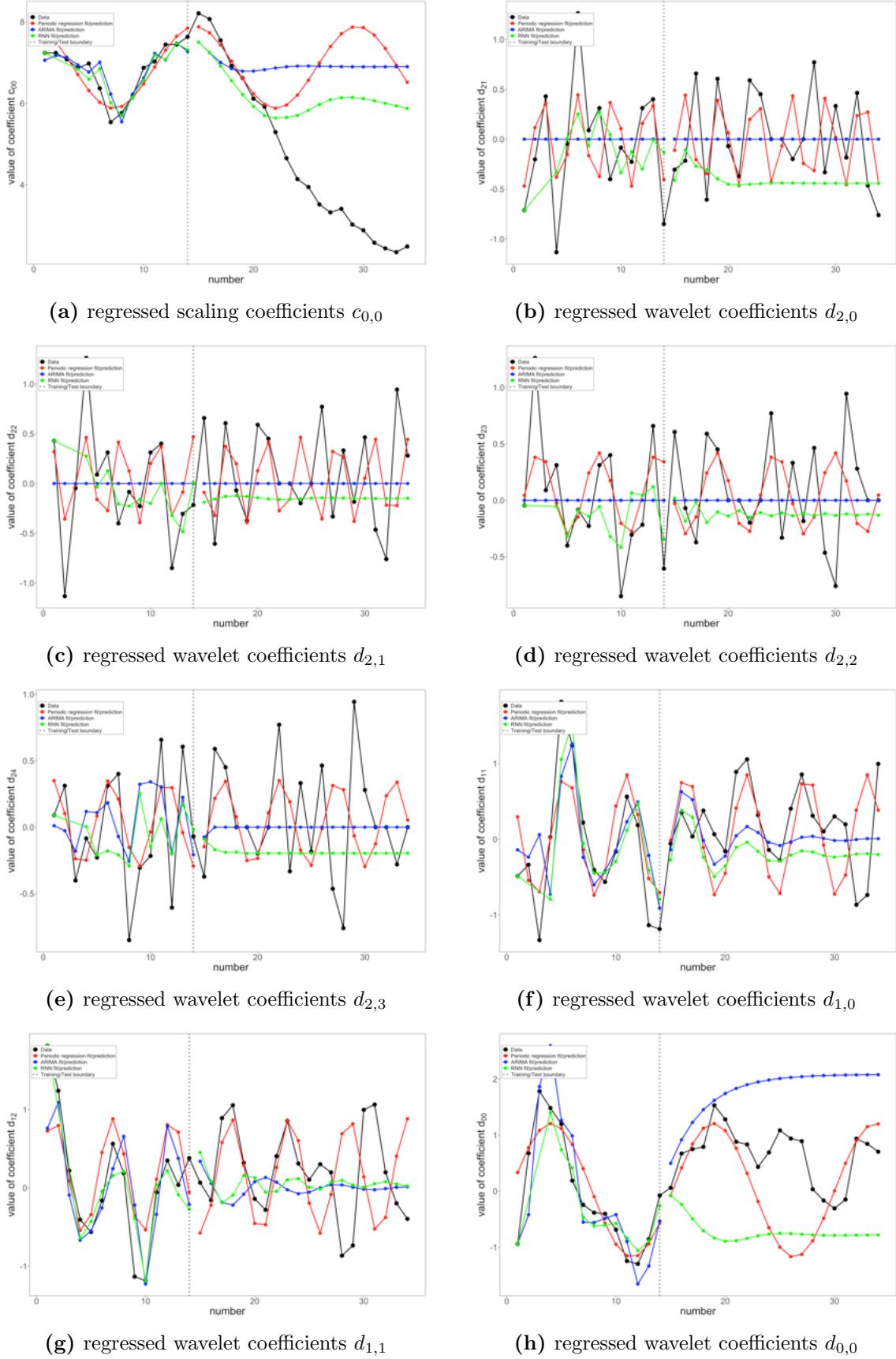


(h) regressed wavelet coefficients  $d_{0,0}$

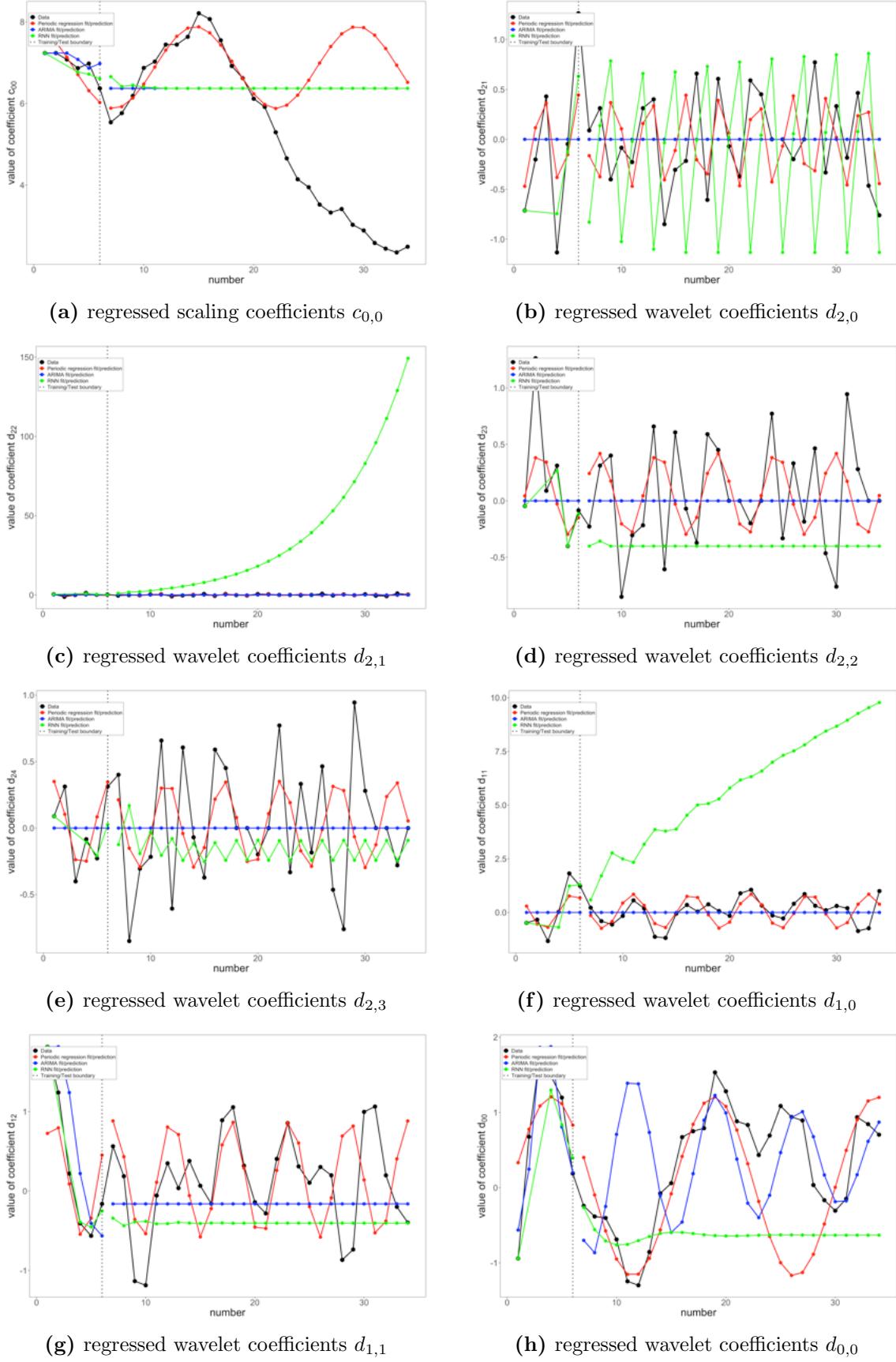
**Fig .6:** Regression result (ndt, 30%, DS1)



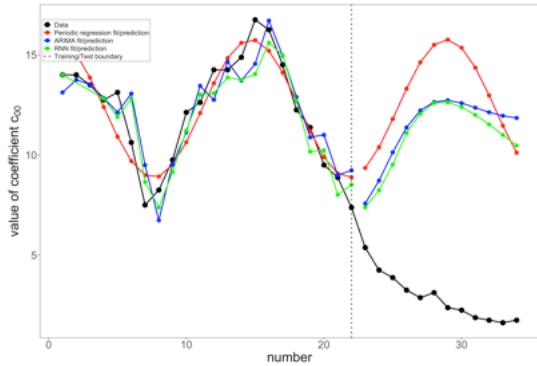
**Fig .7:** Regression result (dt, 70%, DS2)



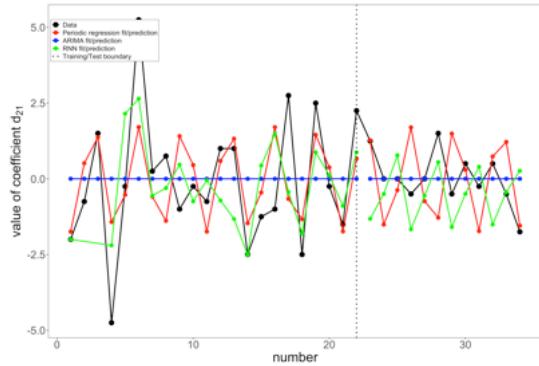
**Fig .8:** Regression result (dt, 50%, DS2)



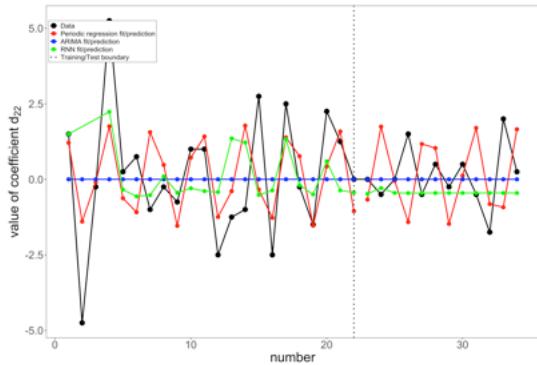
**Fig .9:** Regression result (dt, 30%, DS2)



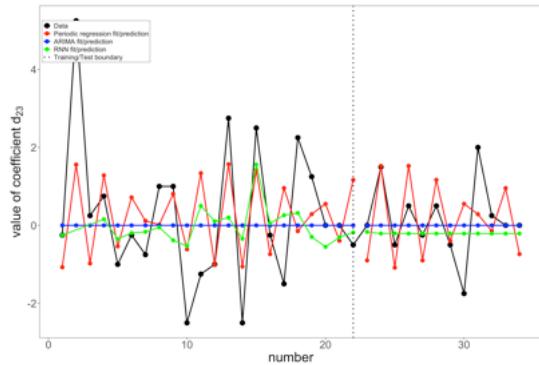
(a) regressed scaling coefficients  $c_{0,0}$



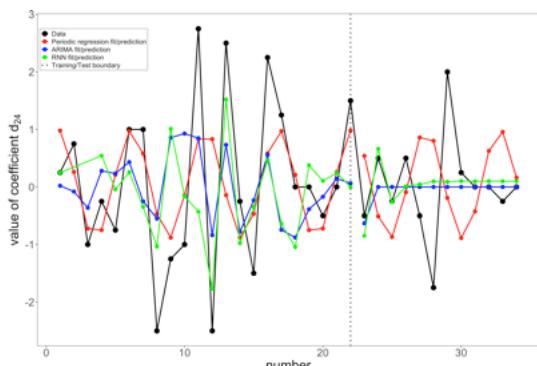
(b) regressed wavelet coefficients  $d_{2,0}$



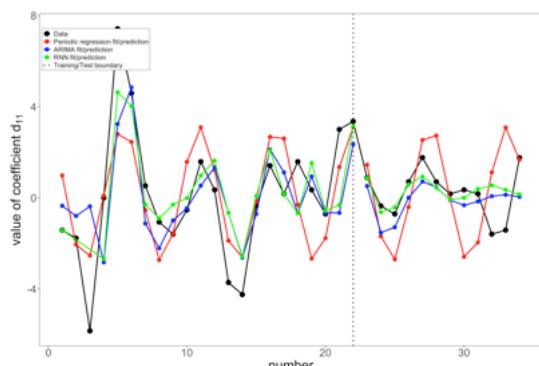
(c) regressed wavelet coefficients  $d_{2,1}$



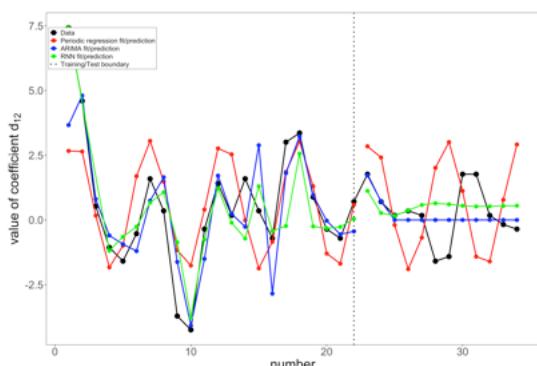
(d) regressed wavelet coefficients  $d_{2,2}$



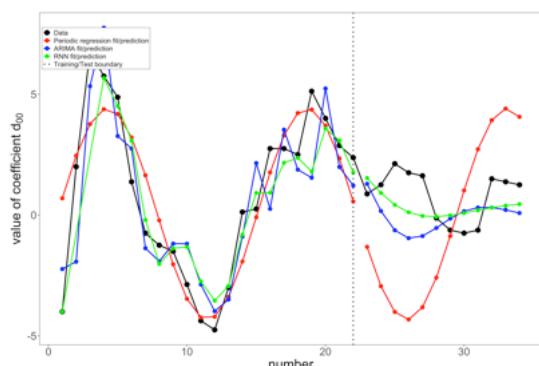
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

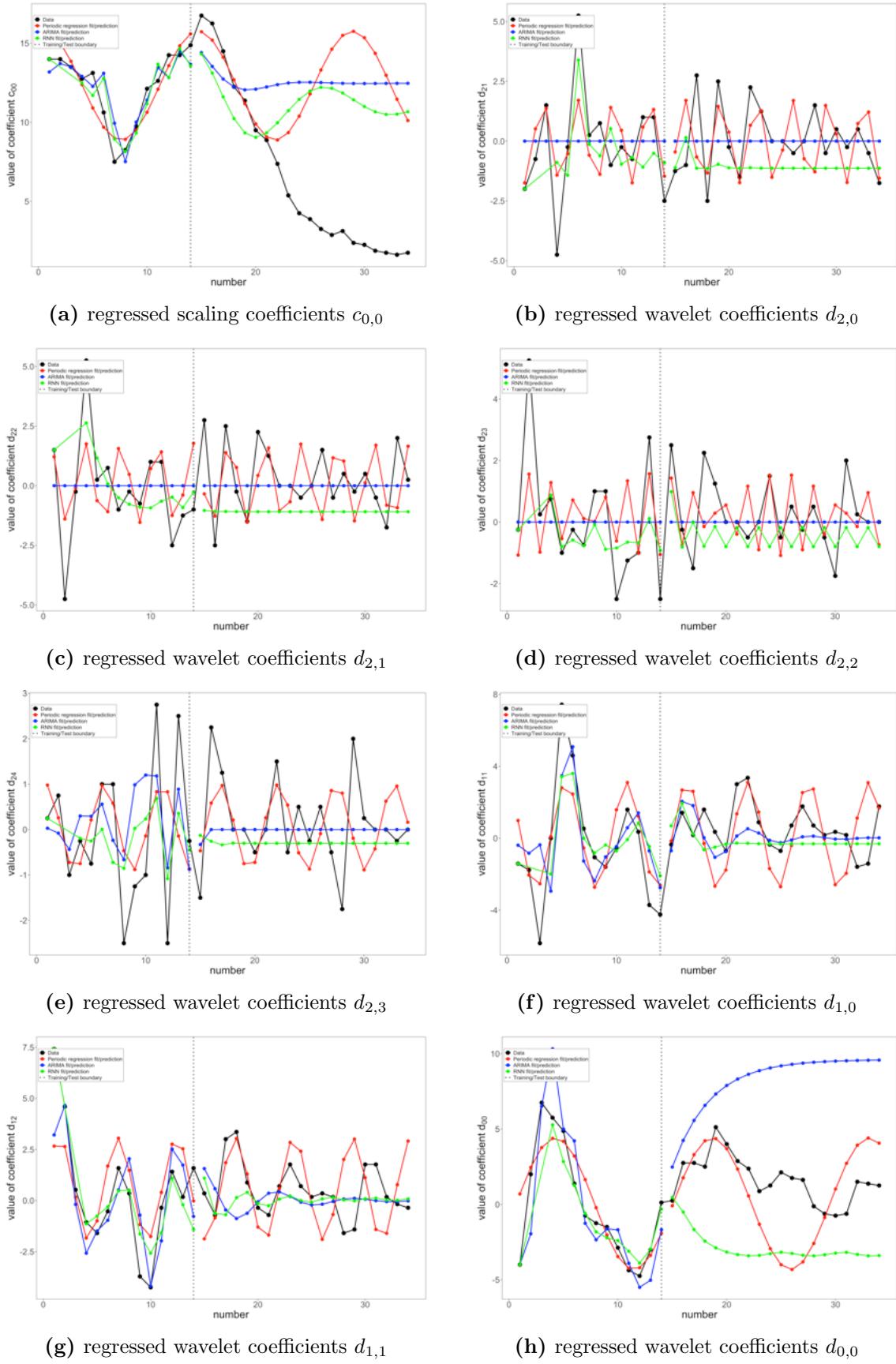


(g) regressed wavelet coefficients  $d_{1,1}$

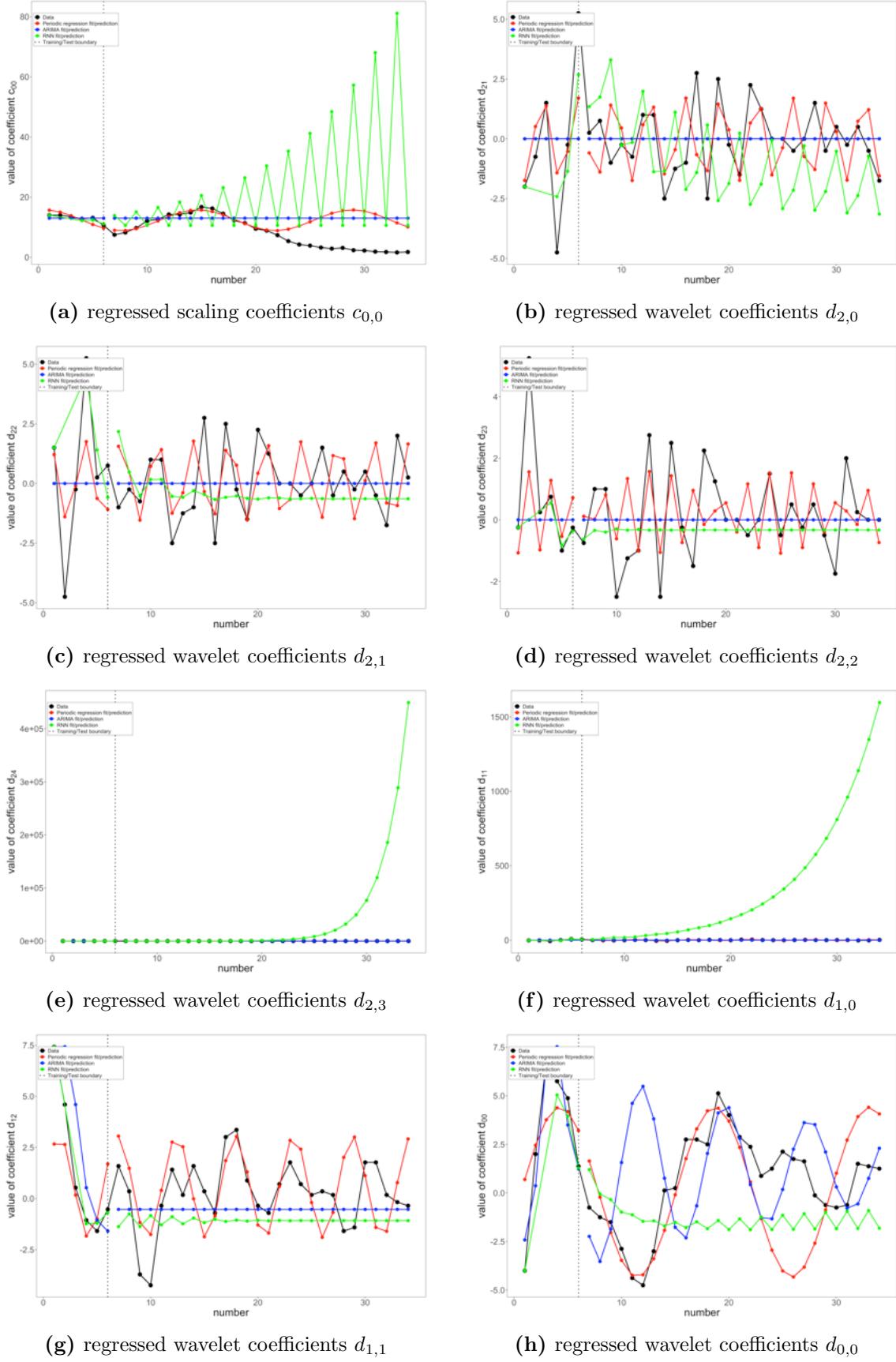


(h) regressed wavelet coefficients  $d_{0,0}$

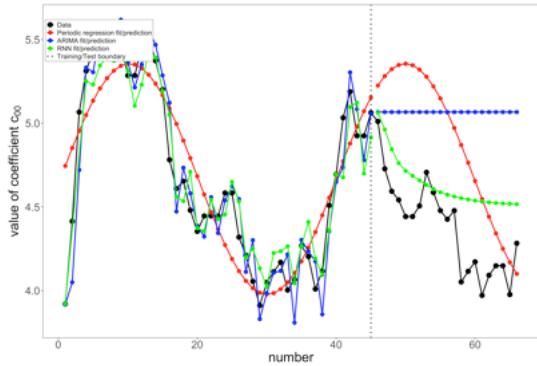
**Fig .10:** Regression result (ndt, 70%, DS2)



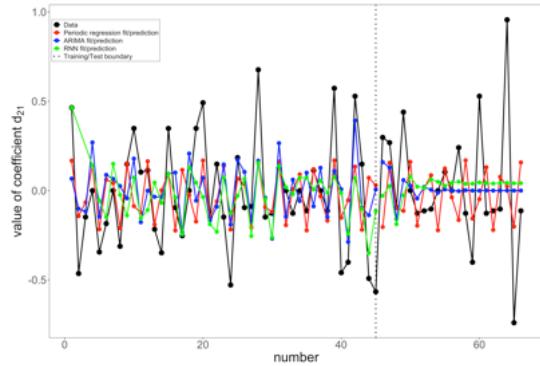
**Fig .11:** Regression result (ndt, 50%, DS2)



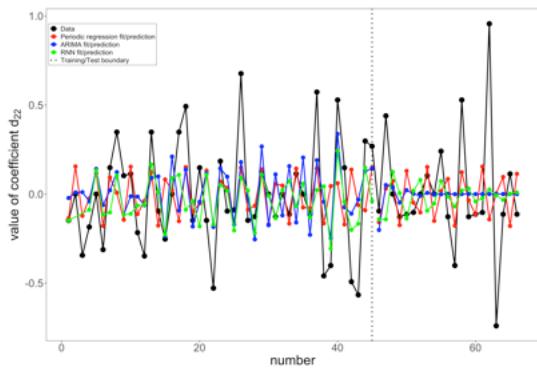
**Fig .12:** Regression result (ndt, 30%, DS2)



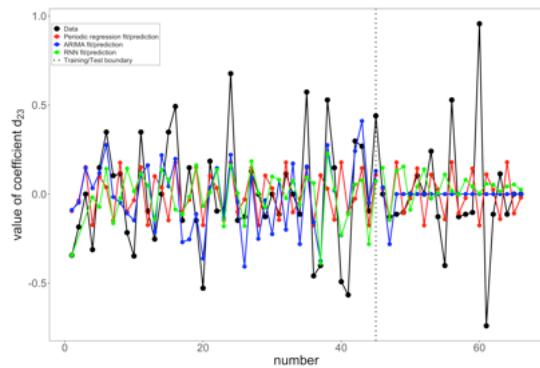
(a) regressed scaling coefficients  $c_{0,0}$



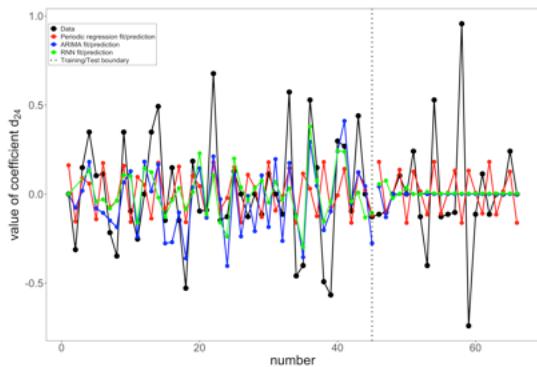
(b) regressed wavelet coefficients  $d_{2,0}$



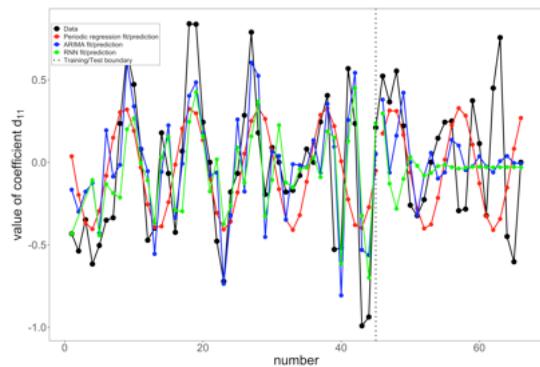
(c) regressed wavelet coefficients  $d_{2,1}$



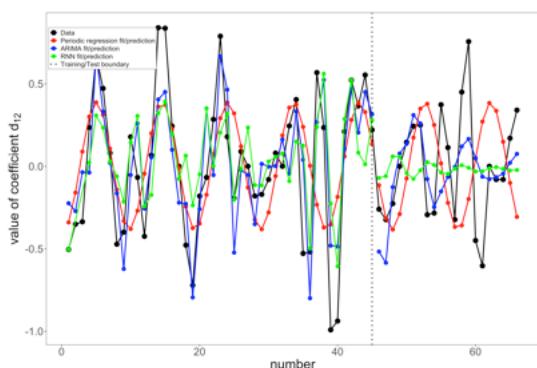
(d) regressed wavelet coefficients  $d_{2,2}$



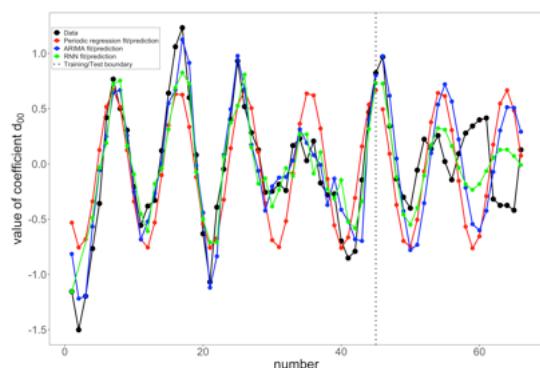
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

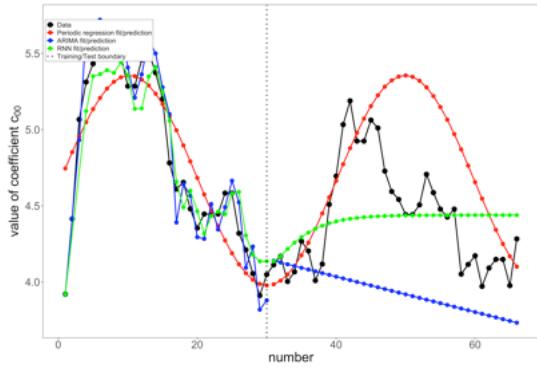


(g) regressed wavelet coefficients  $d_{1,1}$

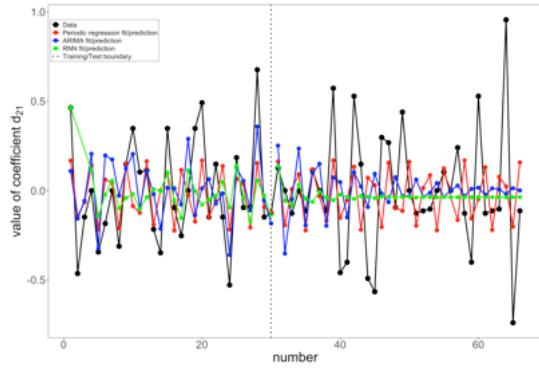


(h) regressed wavelet coefficients  $d_{0,0}$

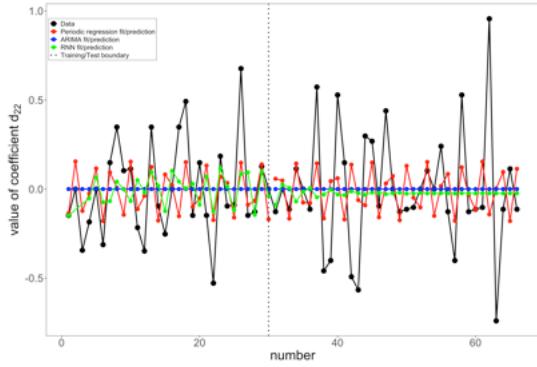
**Fig .13:** Regression result (dt, 70%, DS3)



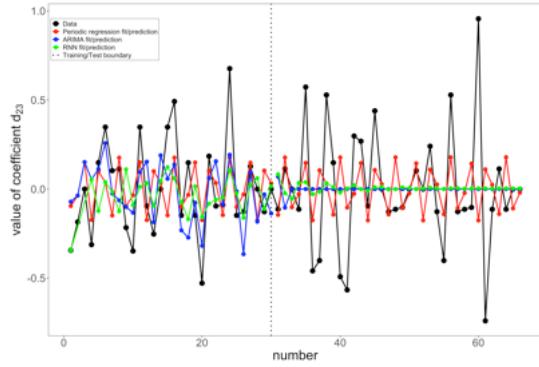
(a) regressed scaling coefficients  $c_{0,0}$



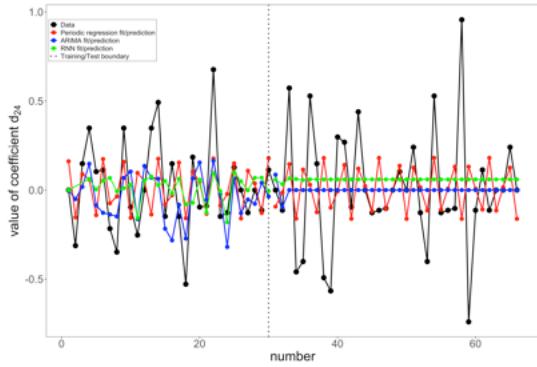
(b) regressed wavelet coefficients  $d_{2,0}$



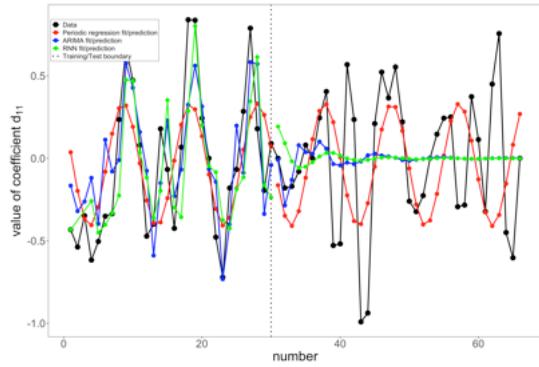
(c) regressed wavelet coefficients  $d_{2,1}$



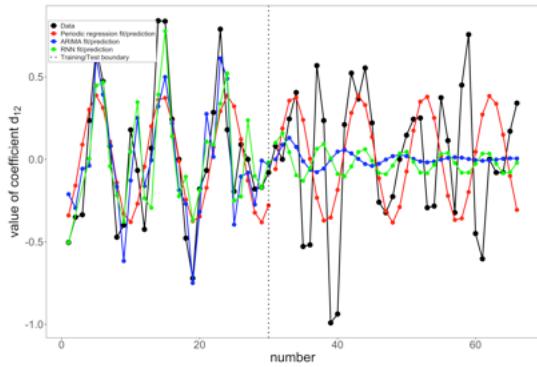
(d) regressed wavelet coefficients  $d_{2,2}$



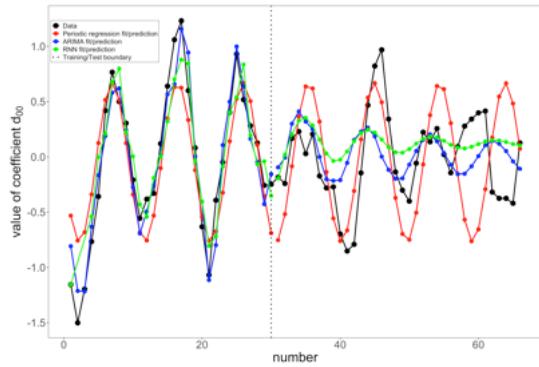
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

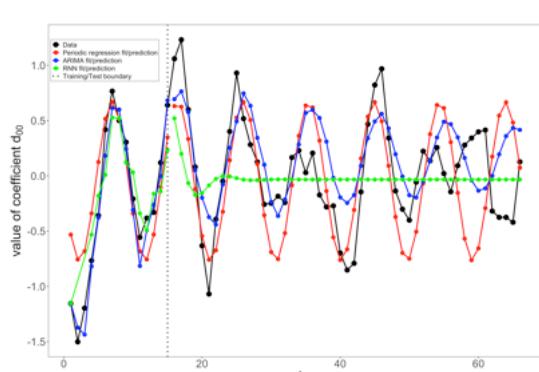
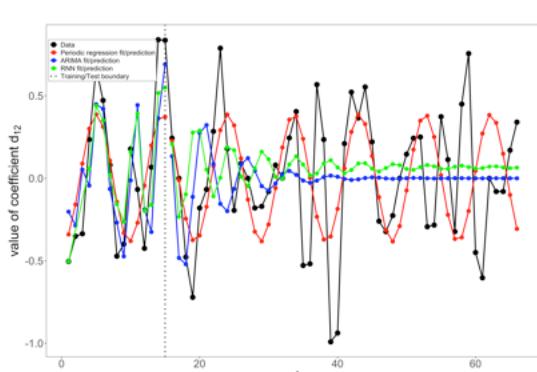
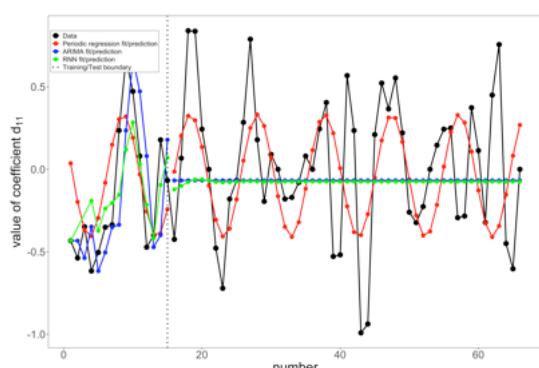
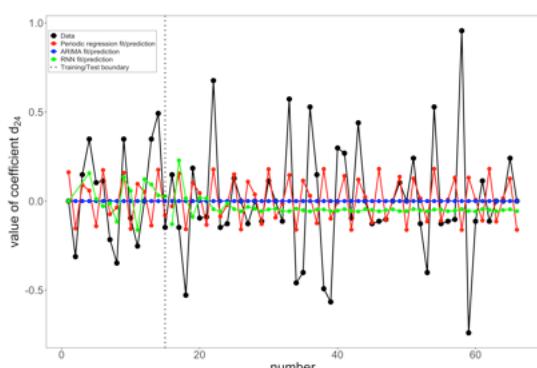
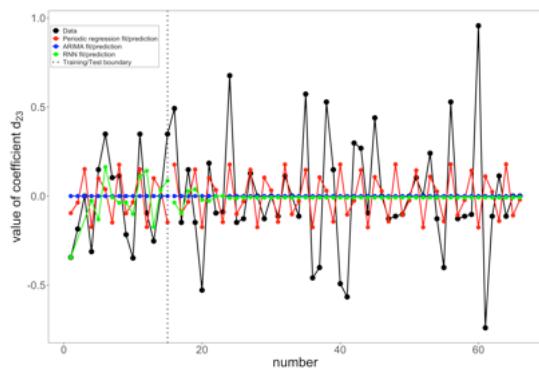
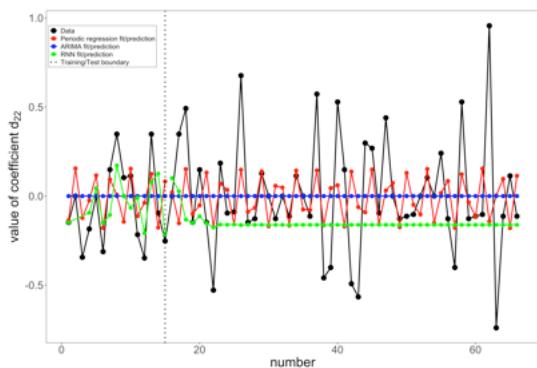
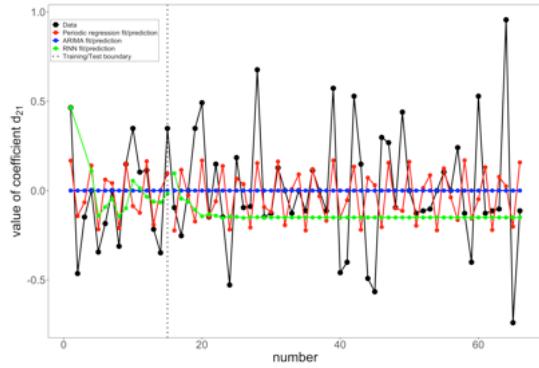
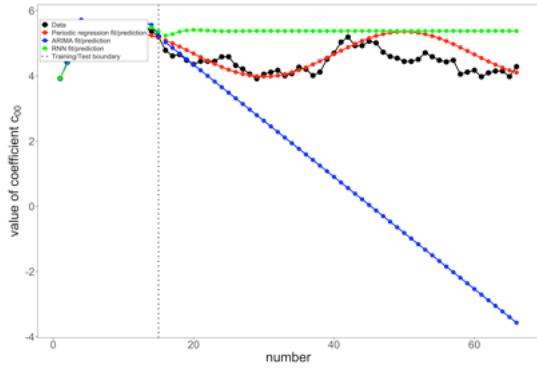


(g) regressed wavelet coefficients  $d_{1,1}$

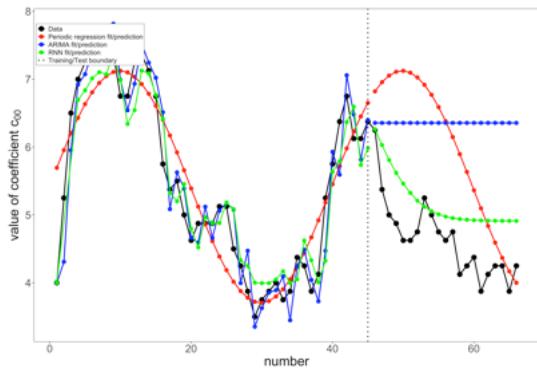


(h) regressed wavelet coefficients  $d_{0,0}$

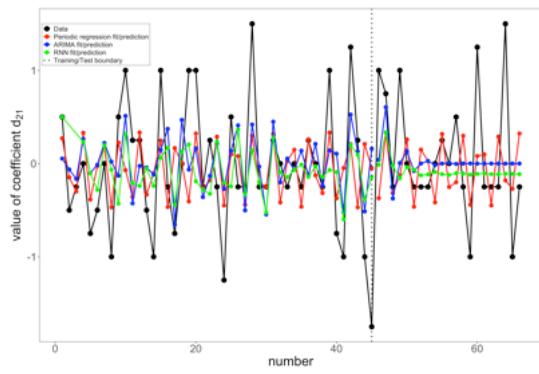
**Fig .14:** Regression result (dt, 50%, DS3)



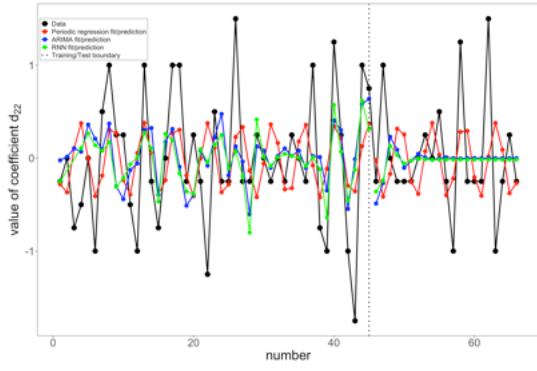
**Fig .15:** Regression result (dt, 30% DS3)



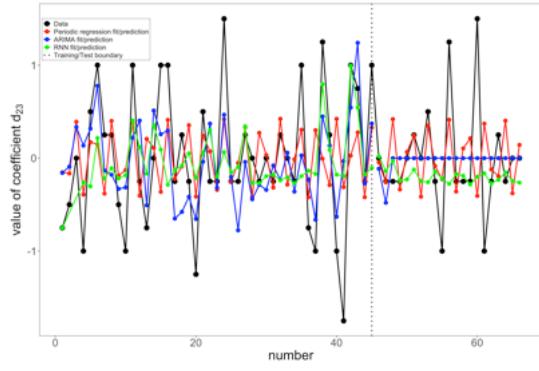
(a) regressed scaling coefficients  $c_{0,0}$



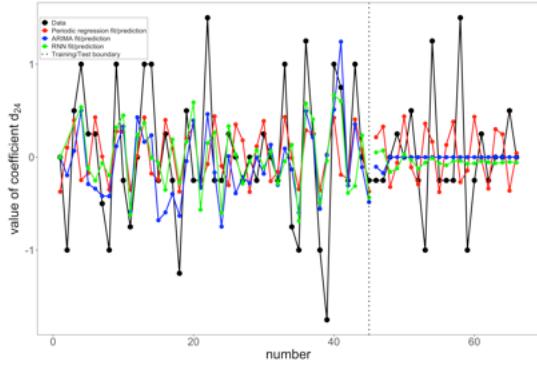
(b) regressed wavelet coefficients  $d_{2,0}$



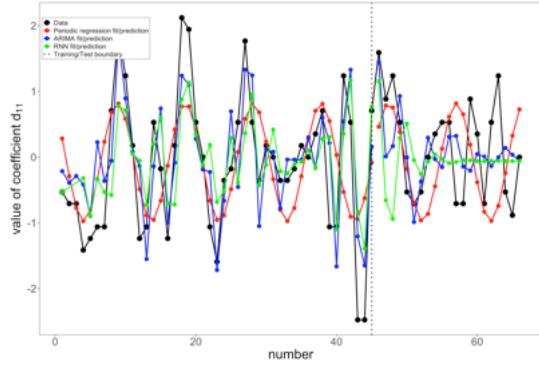
(c) regressed wavelet coefficients  $d_{2,1}$



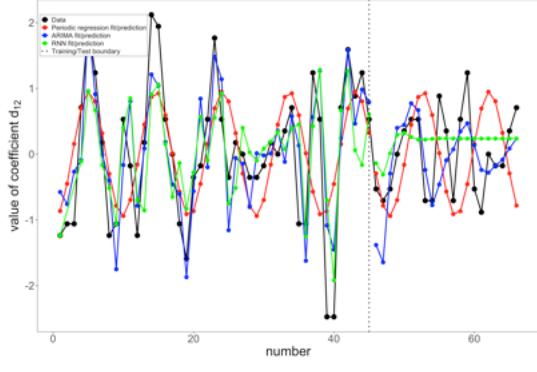
(d) regressed wavelet coefficients  $d_{2,2}$



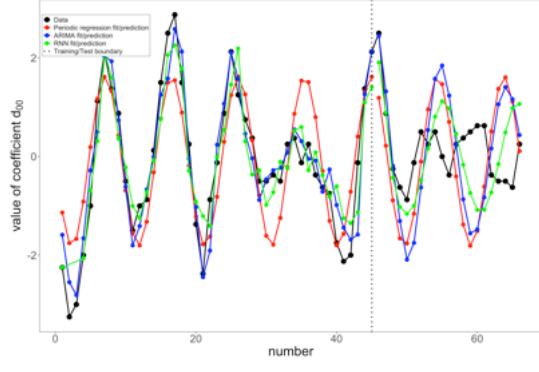
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

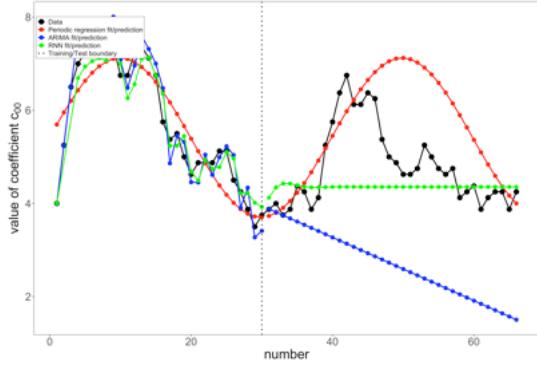


(g) regressed wavelet coefficients  $d_{1,1}$

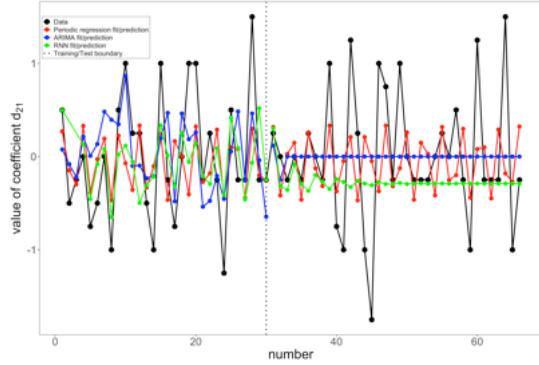


(h) regressed wavelet coefficients  $d_{0,0}$

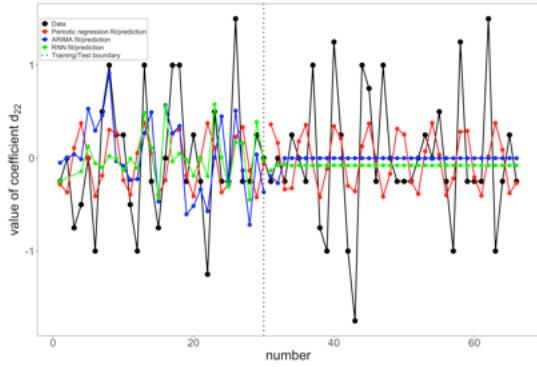
**Fig .16:** Regression result (ndt, 70%, DS3)



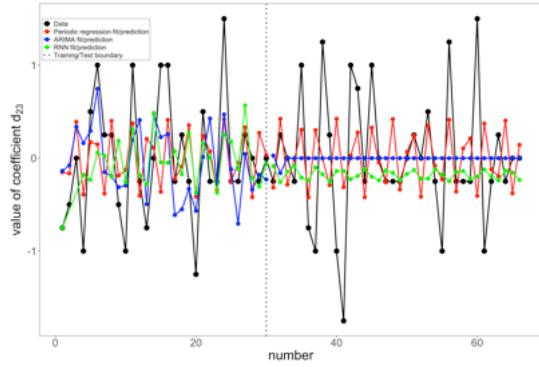
(a) regressed scaling coefficients  $c_{0,0}$



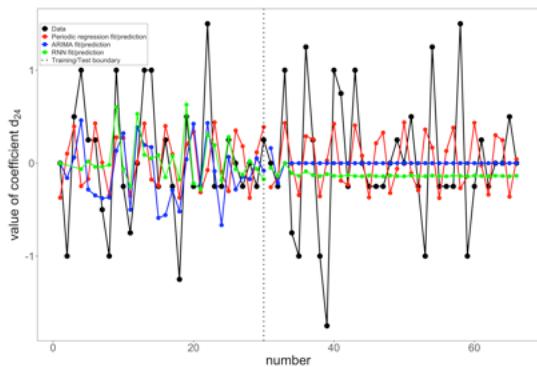
(b) regressed wavelet coefficients  $d_{2,0}$



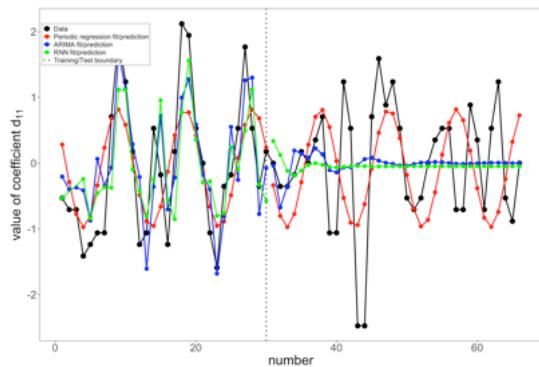
(c) regressed wavelet coefficients  $d_{2,1}$



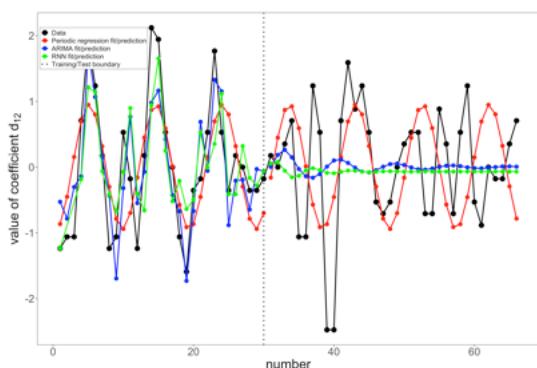
(d) regressed wavelet coefficients  $d_{2,2}$



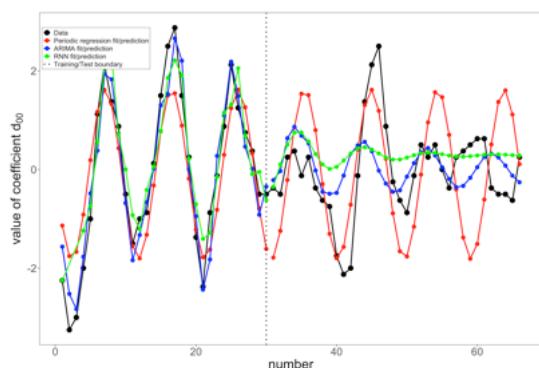
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

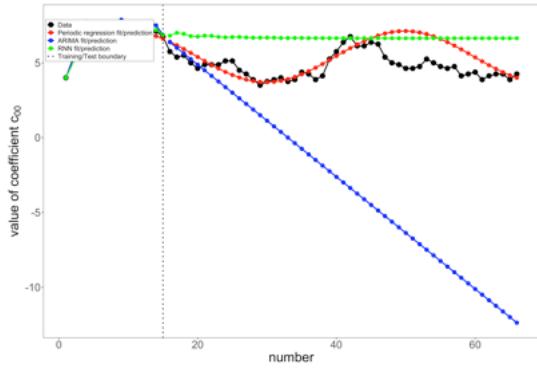


(g) regressed wavelet coefficients  $d_{1,1}$

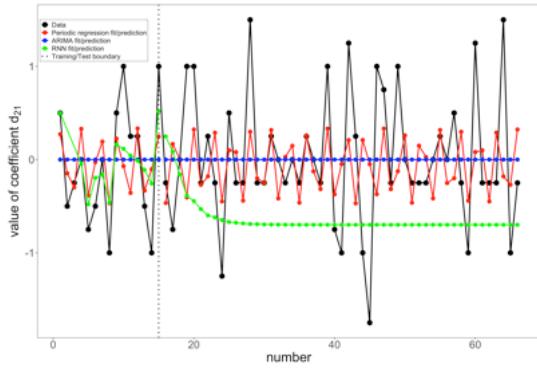


(h) regressed wavelet coefficients  $d_{0,0}$

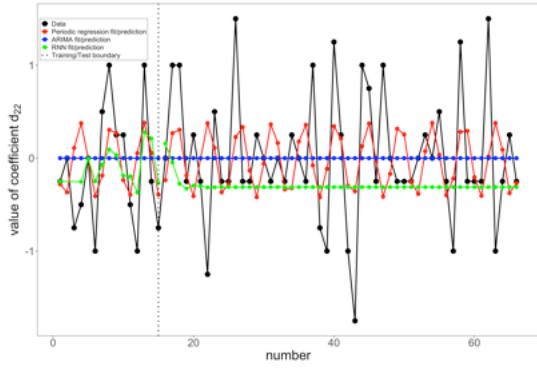
**Fig .17:** Regression result (ndt, 50%, DS3)



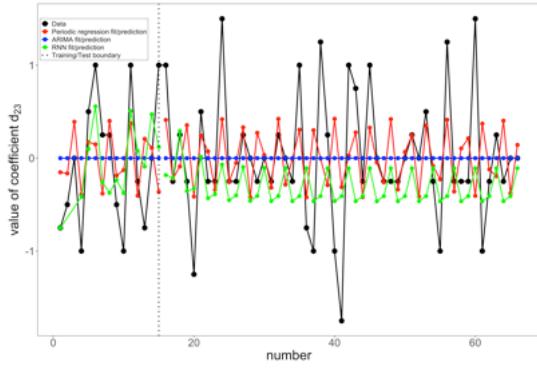
(a) regressed scaling coefficients  $c_{0,0}$



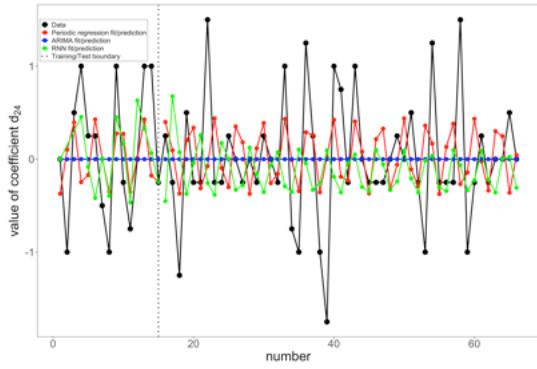
(b) regressed wavelet coefficients  $d_{2,0}$



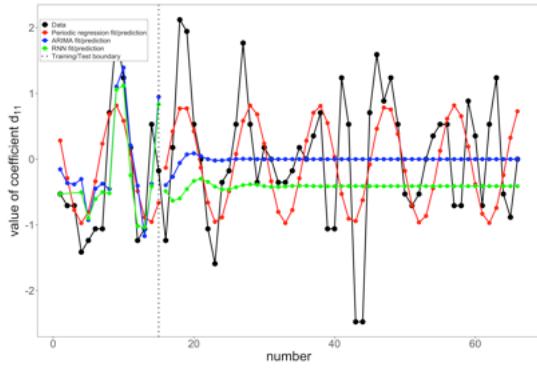
(c) regressed wavelet coefficients  $d_{2,1}$



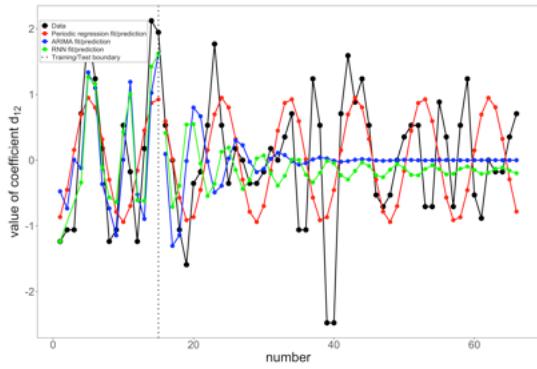
(d) regressed wavelet coefficients  $d_{2,2}$



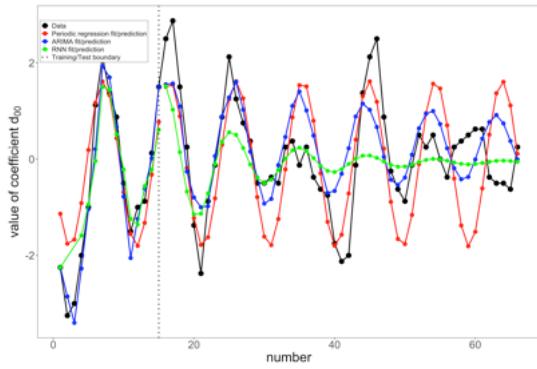
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

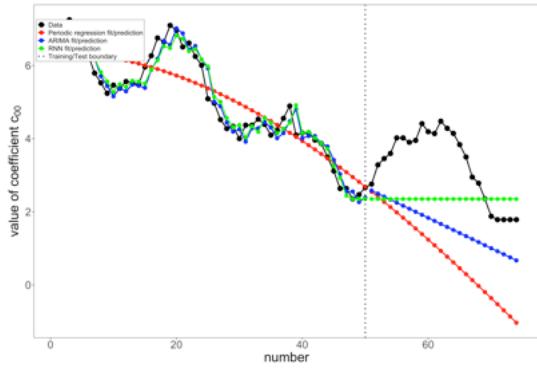


(g) regressed wavelet coefficients  $d_{1,1}$

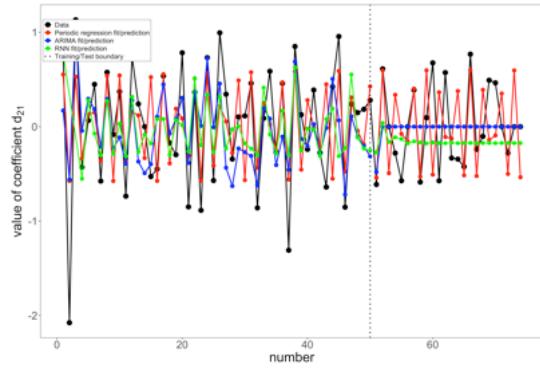


(h) regressed wavelet coefficients  $d_{0,0}$

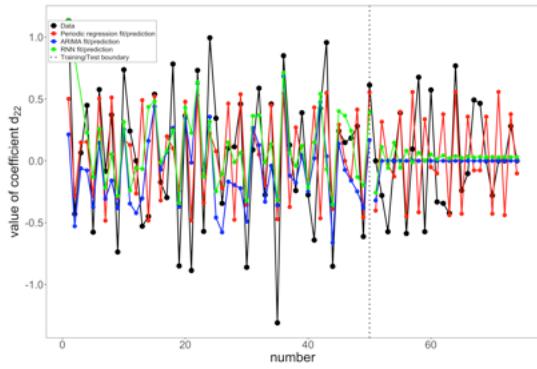
**Fig .18:** Regression result (ndt, 30%, DS3)



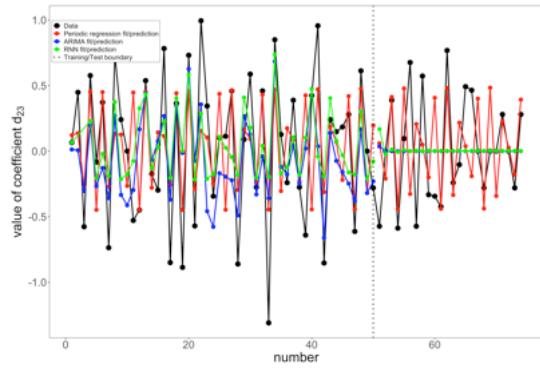
(a) regressed scaling coefficients  $c_{0,0}$



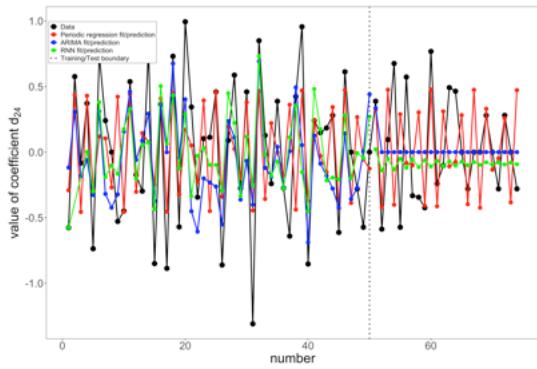
(b) regressed wavelet coefficients  $d_{2,0}$



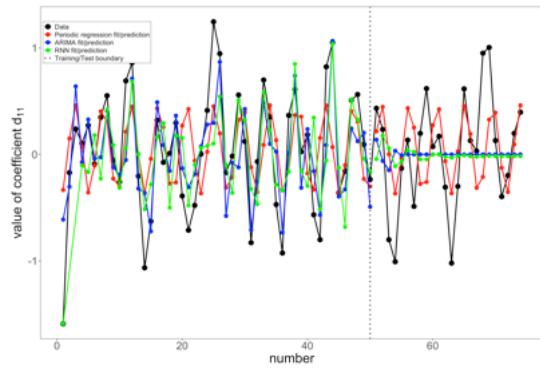
(c) regressed wavelet coefficients  $d_{2,1}$



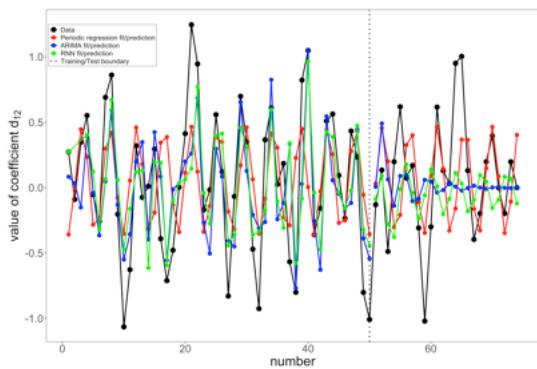
(d) regressed wavelet coefficients  $d_{2,2}$



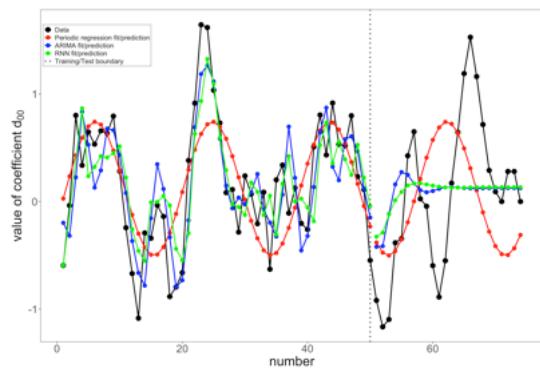
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

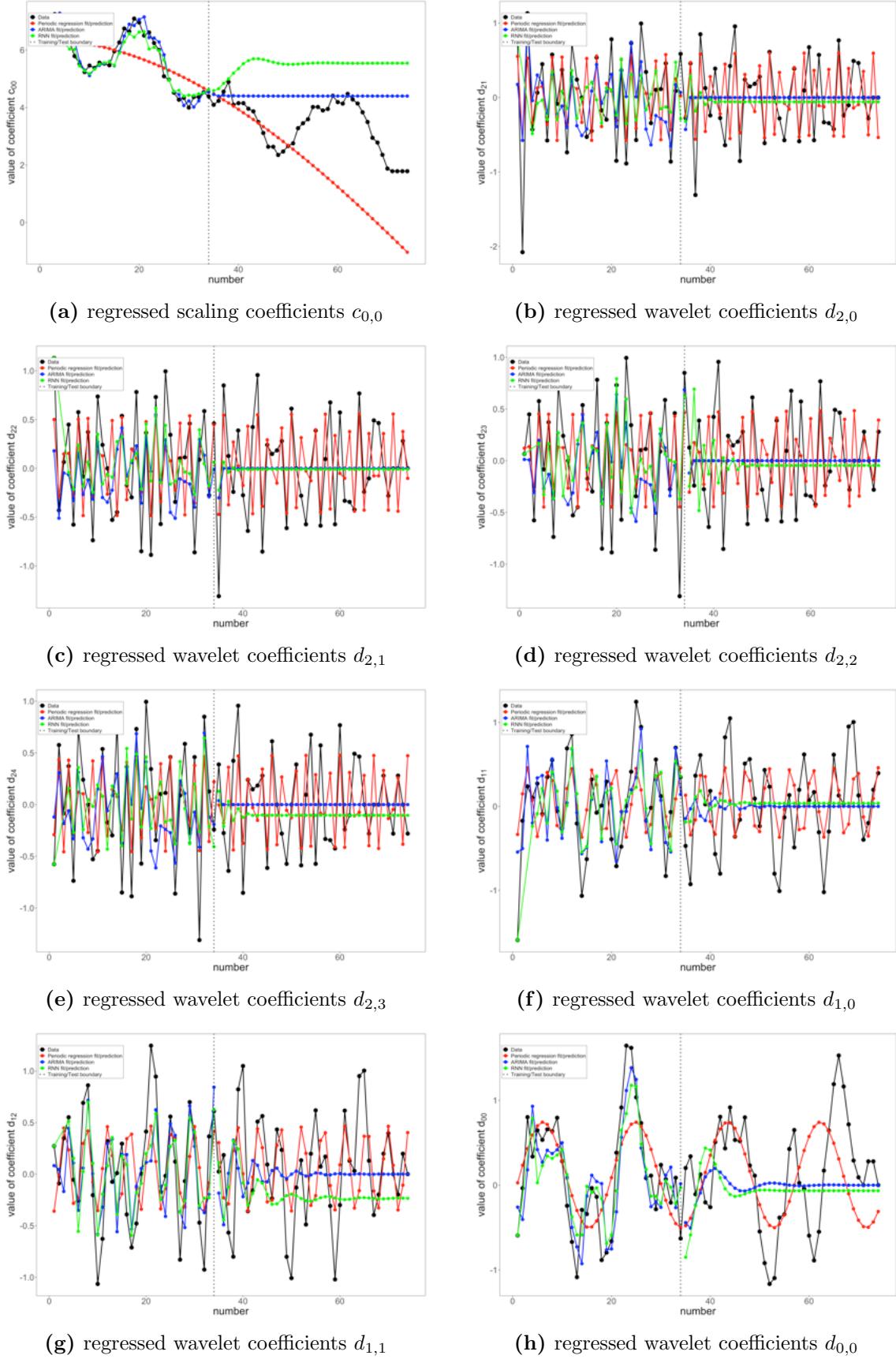


(g) regressed wavelet coefficients  $d_{1,1}$

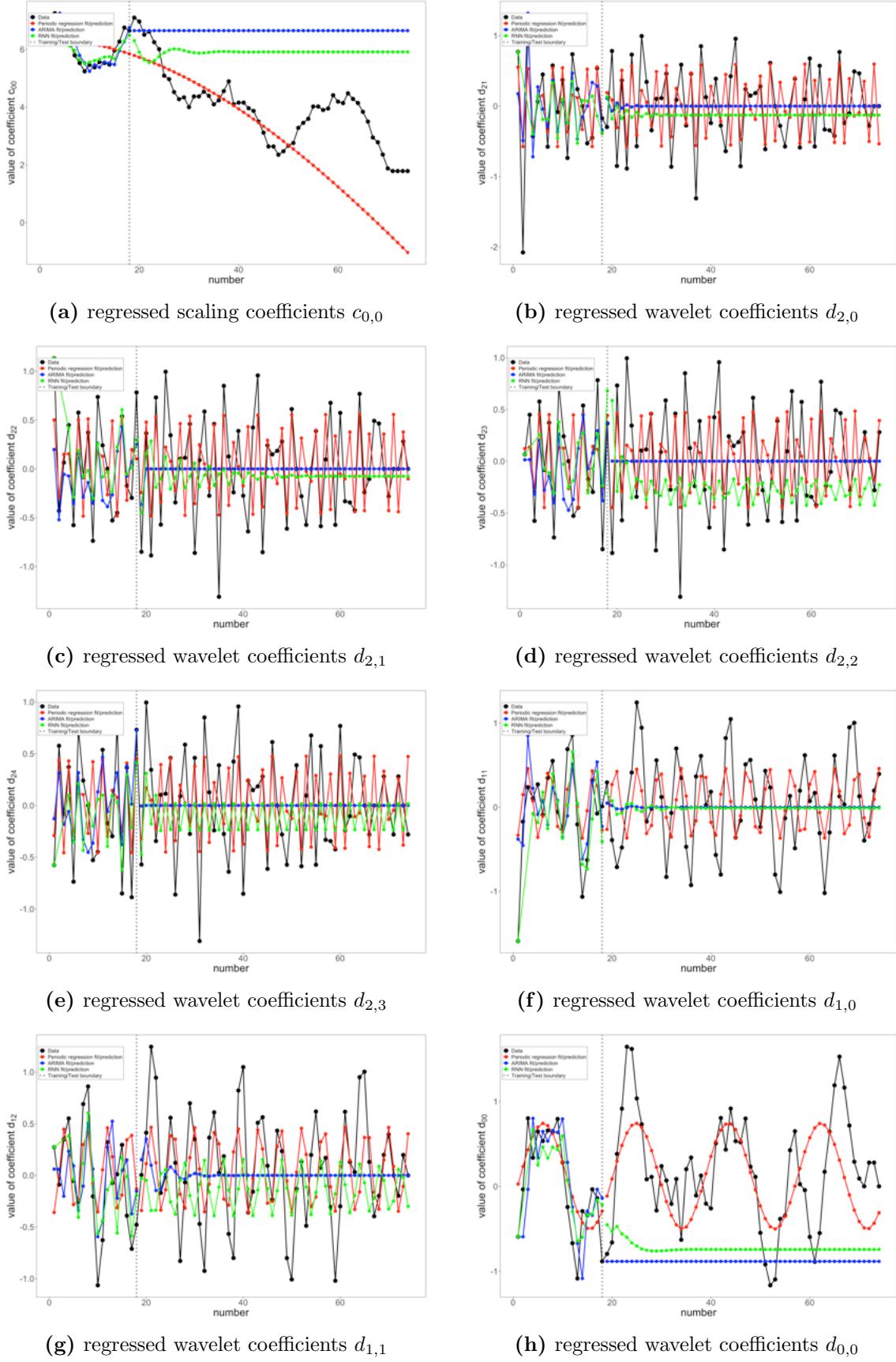


(h) regressed wavelet coefficients  $d_{0,0}$

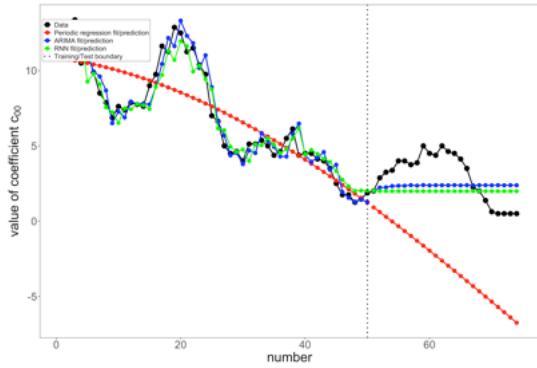
**Fig .19:** Regression result (dt, 70%, DS4)



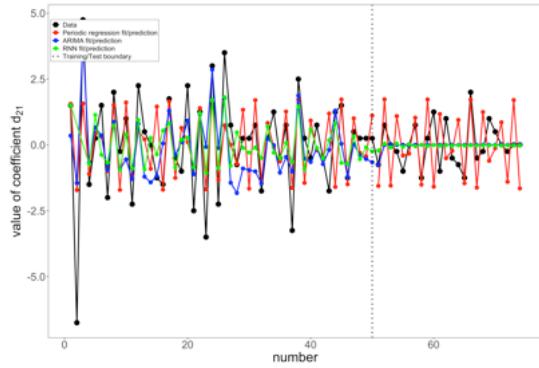
**Fig .20:** Regression result (dt, 50%, DS4)



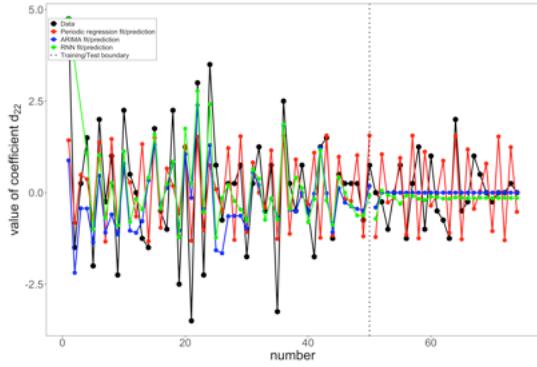
**Fig .21:** Regression result (dt, 30%, DS4)



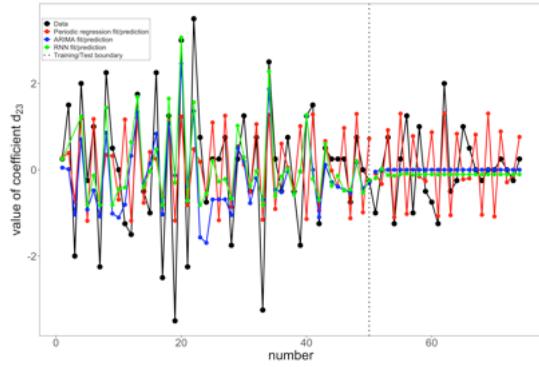
(a) regressed scaling coefficients  $c_{0,0}$



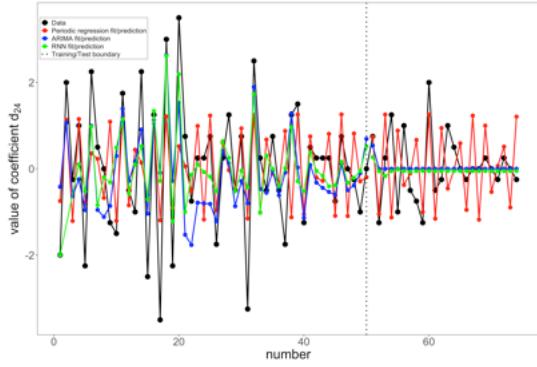
(b) regressed wavelet coefficients  $d_{2,0}$



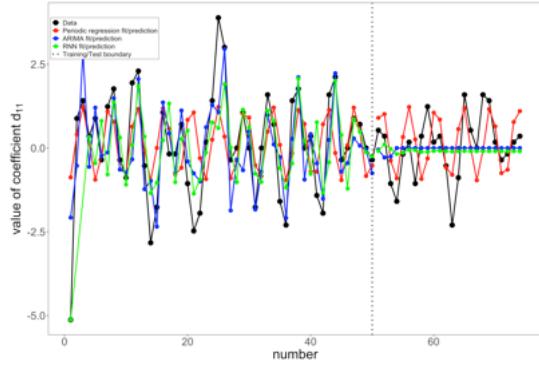
(c) regressed wavelet coefficients  $d_{2,1}$



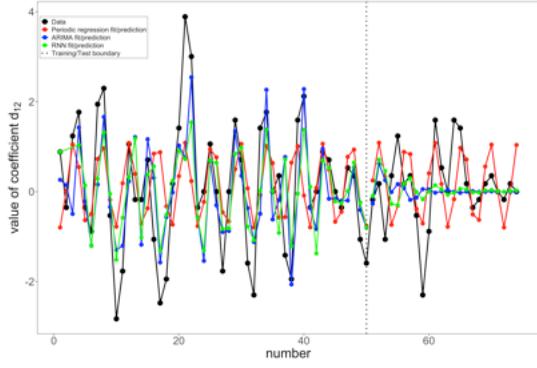
(d) regressed wavelet coefficients  $d_{2,2}$



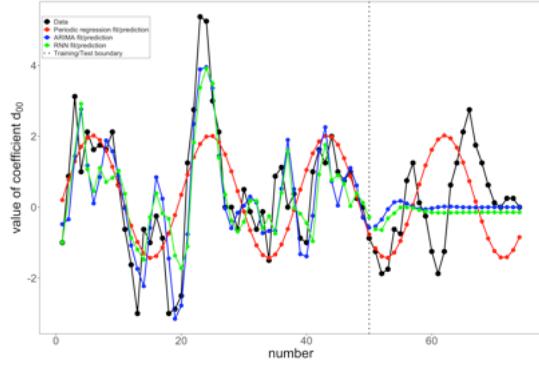
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

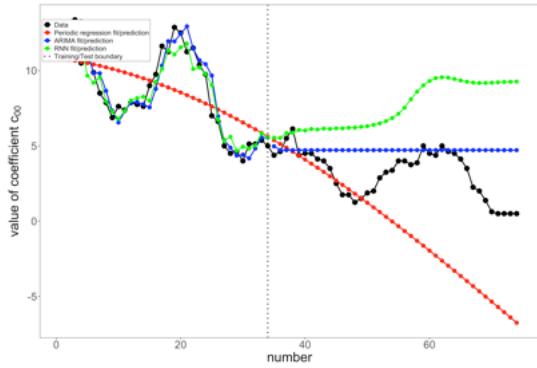


(g) regressed wavelet coefficients  $d_{1,1}$

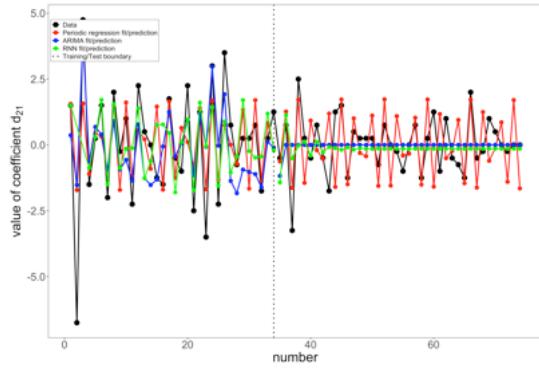


(h) regressed wavelet coefficients  $d_{0,0}$

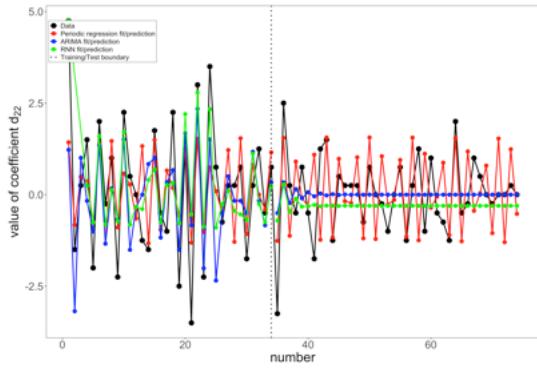
**Fig .22:** Regression result (ndt, 70%, DS4)



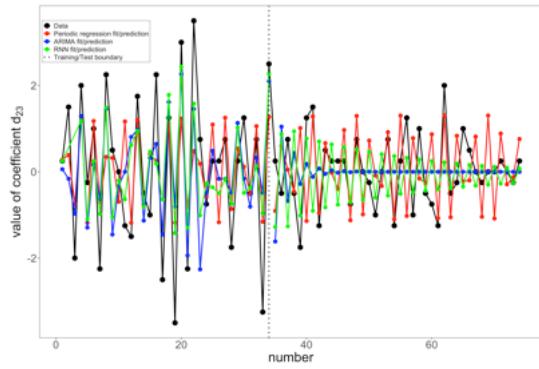
(a) regressed scaling coefficients  $c_{0,0}$



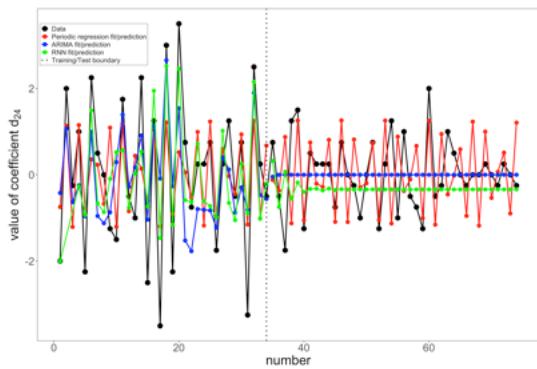
(b) regressed wavelet coefficients  $d_{2,0}$



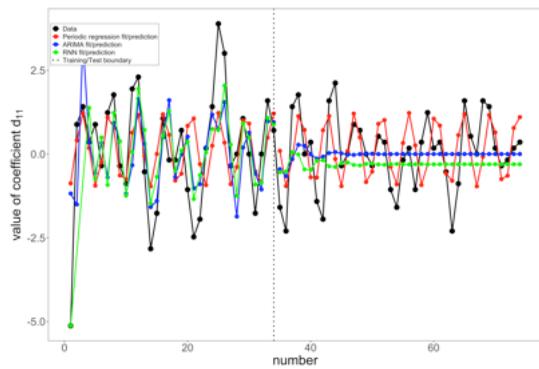
(c) regressed wavelet coefficients  $d_{2,1}$



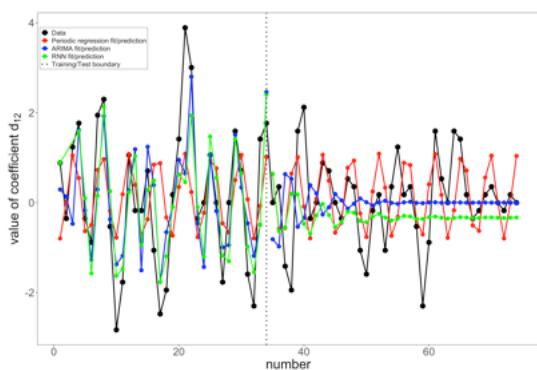
(d) regressed wavelet coefficients  $d_{2,2}$



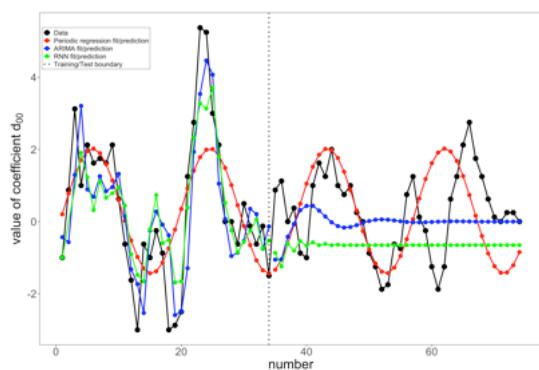
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

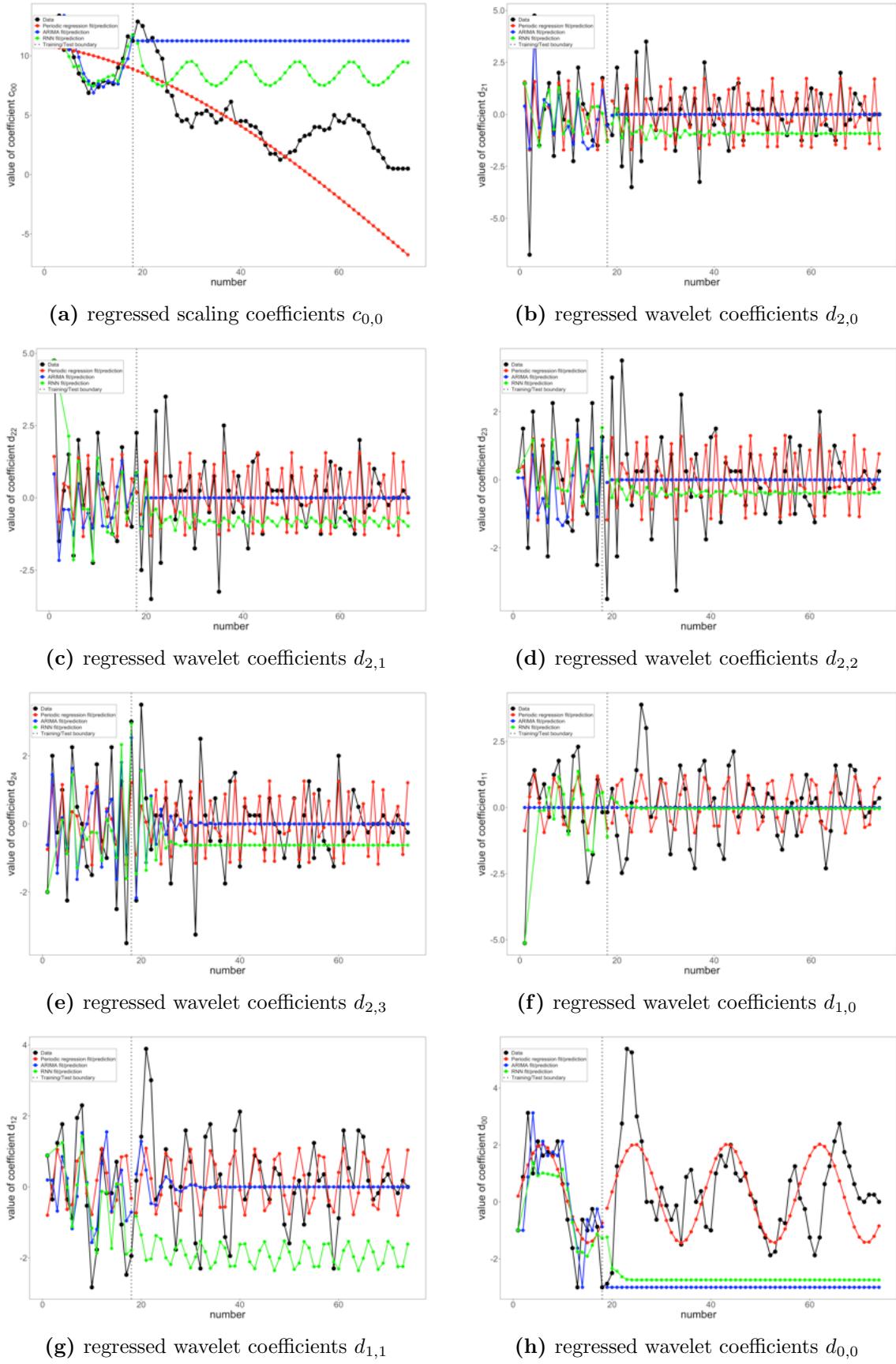


(g) regressed wavelet coefficients  $d_{1,1}$

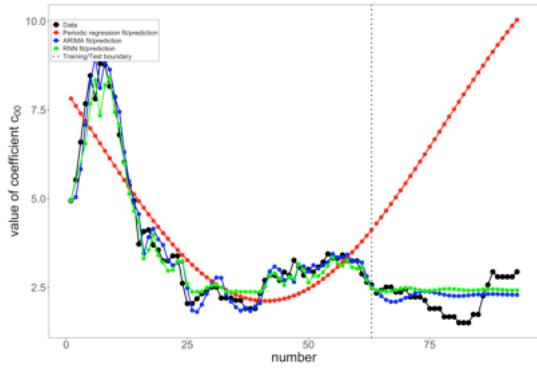


(h) regressed wavelet coefficients  $d_{0,0}$

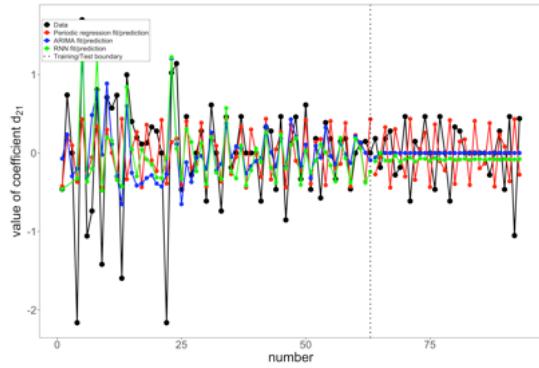
**Fig .23:** Regression result (ndt, 50%, DS4)



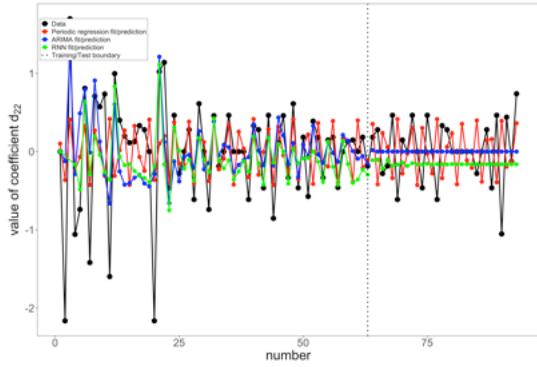
**Fig .24:** Regression result (ndt, 30%, DS4)



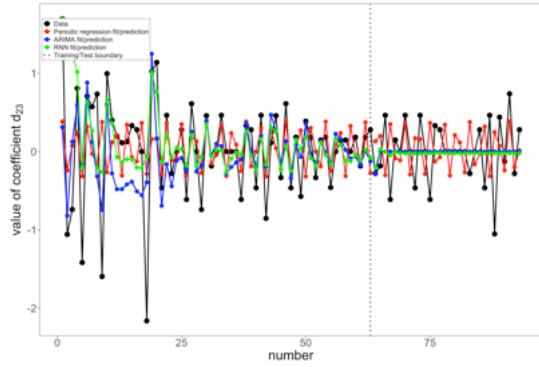
(a) regressed scaling coefficients  $c_{0,0}$



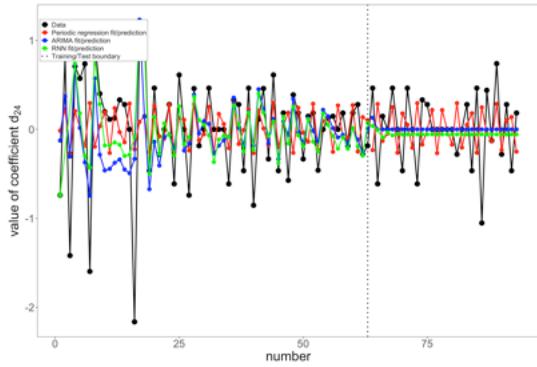
(b) regressed wavelet coefficients  $d_{2,0}$



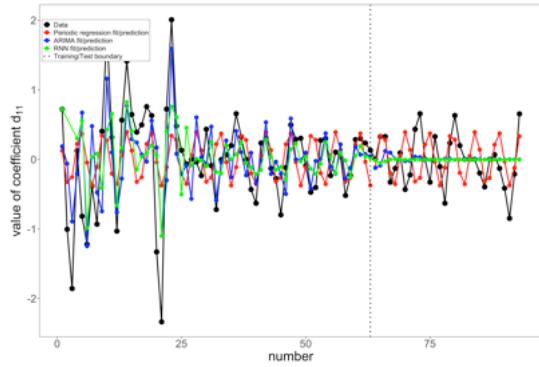
(c) regressed wavelet coefficients  $d_{2,1}$



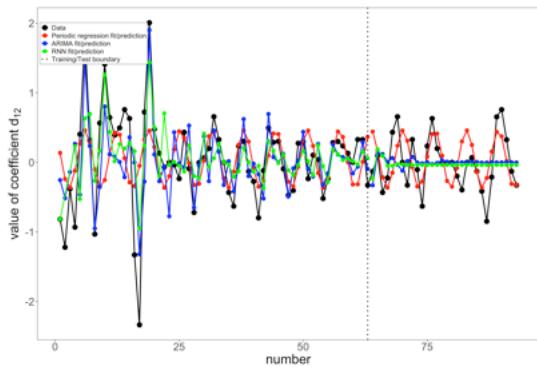
(d) regressed wavelet coefficients  $d_{2,2}$



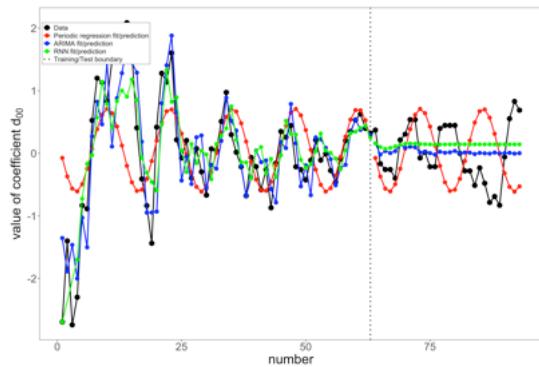
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

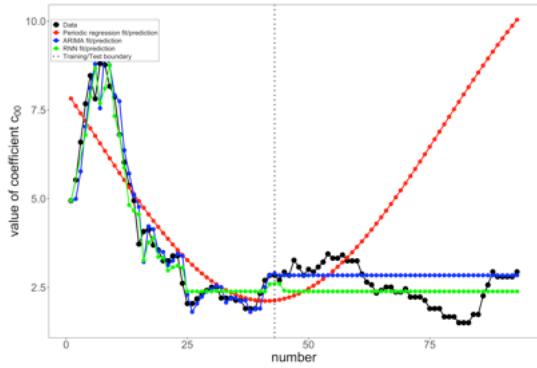


(g) regressed wavelet coefficients  $d_{1,1}$

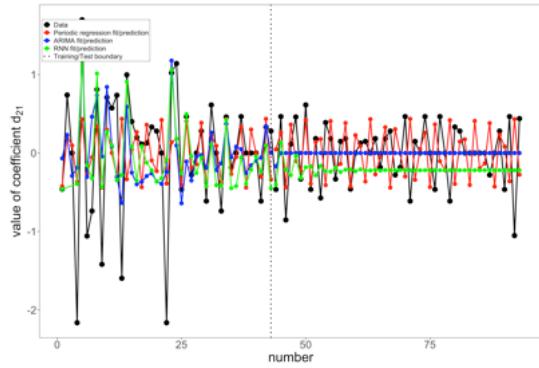


(h) regressed wavelet coefficients  $d_{0,0}$

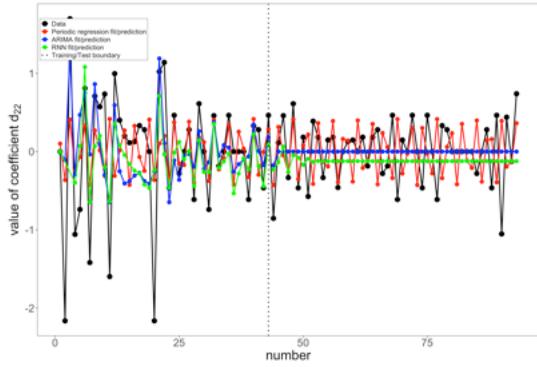
**Fig .25:** Regression result (dt, 70%, DS5)



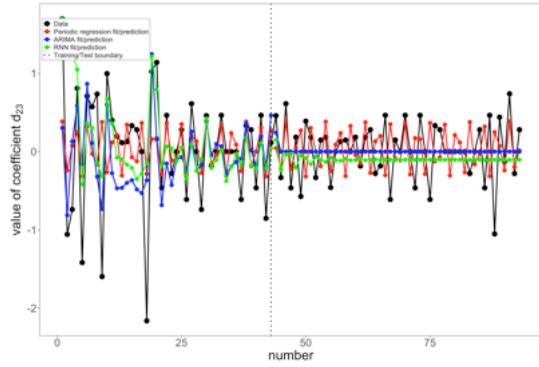
(a) regressed scaling coefficients  $c_{0,0}$



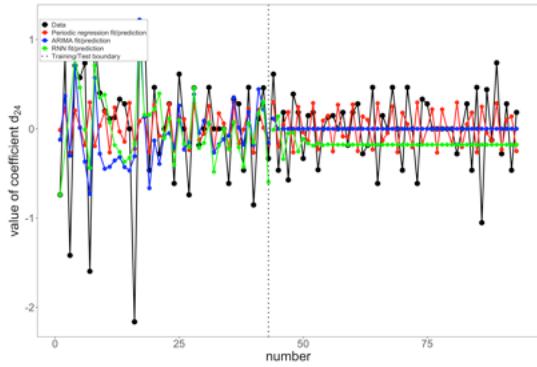
(b) regressed wavelet coefficients  $d_{2,0}$



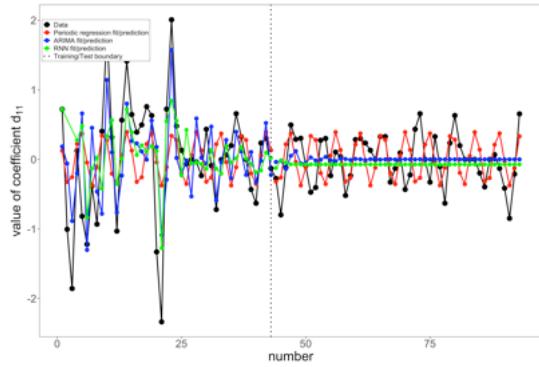
(c) regressed wavelet coefficients  $d_{2,1}$



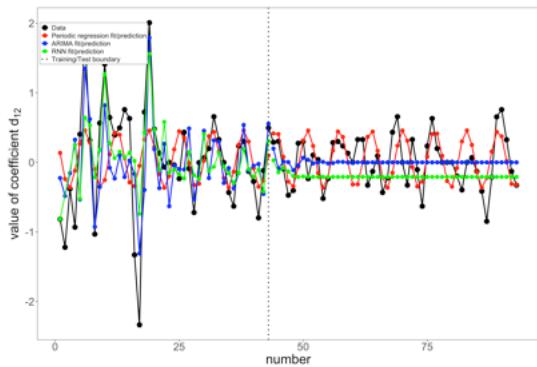
(d) regressed wavelet coefficients  $d_{2,2}$



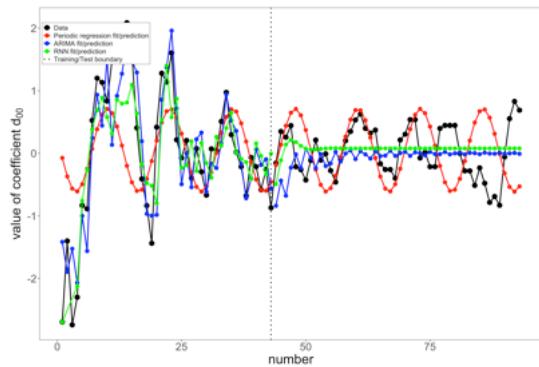
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

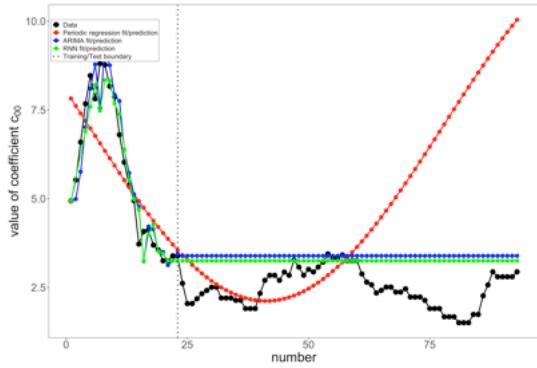


(g) regressed wavelet coefficients  $d_{1,1}$

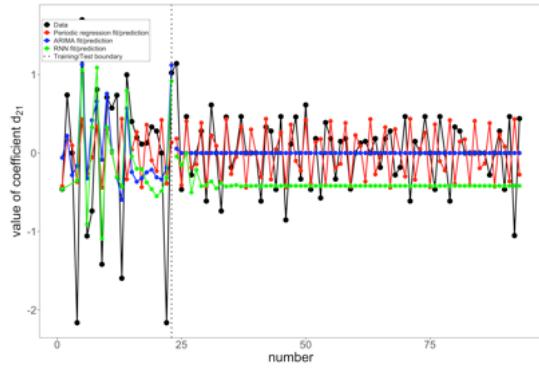


(h) regressed wavelet coefficients  $d_{0,0}$

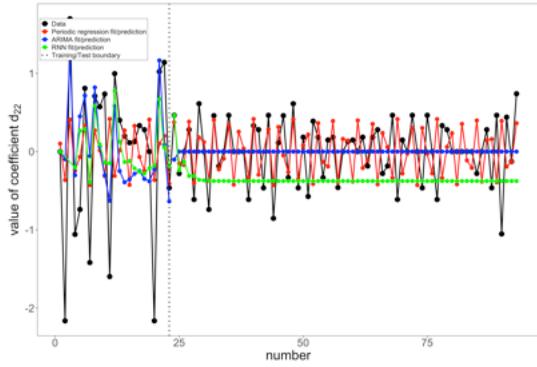
**Fig .26:** Regression result (dt, 50%, DS5)



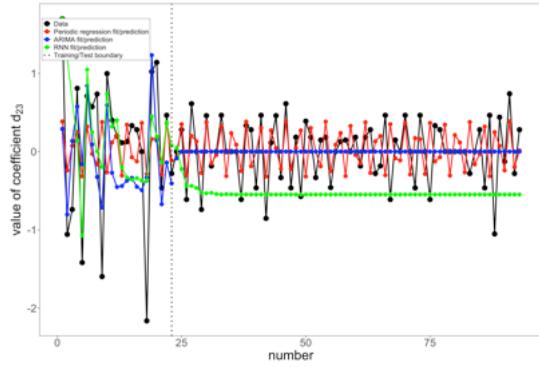
(a) regressed scaling coefficients  $c_{0,0}$



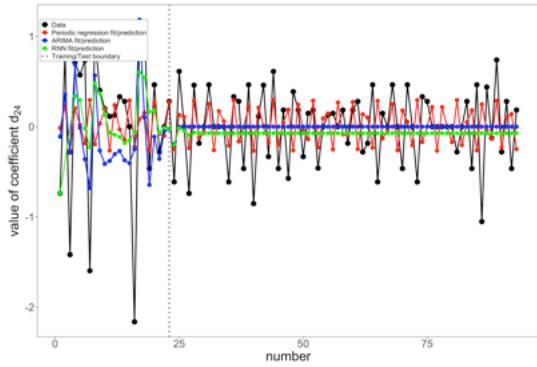
(b) regressed wavelet coefficients  $d_{2,0}$



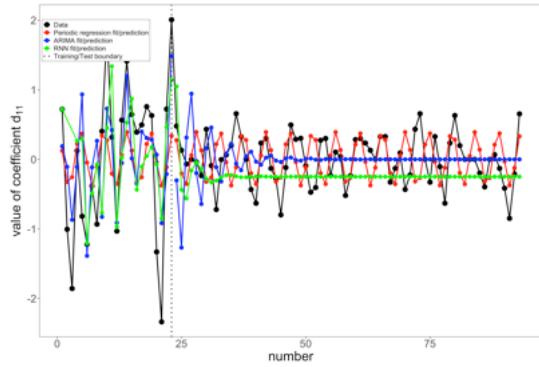
(c) regressed wavelet coefficients  $d_{2,1}$



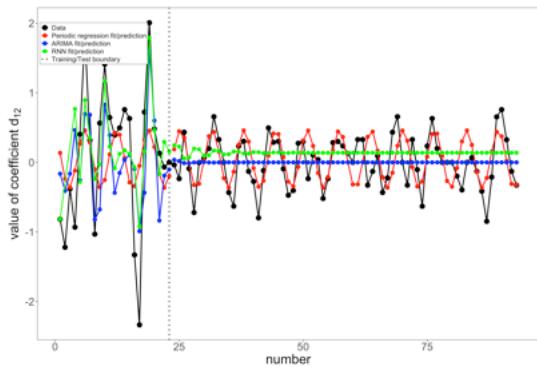
(d) regressed wavelet coefficients  $d_{2,2}$



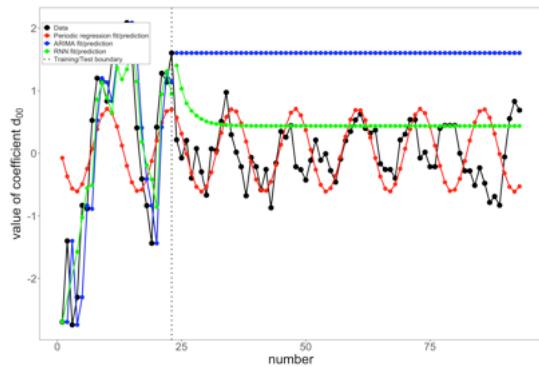
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

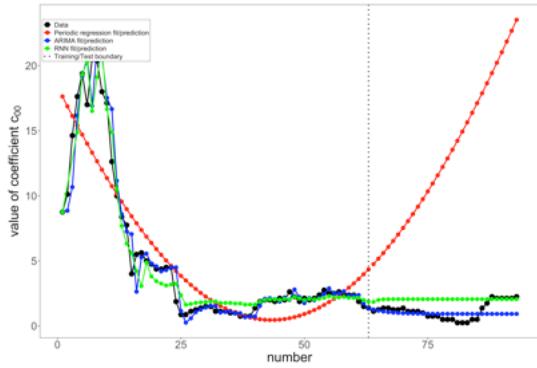


(g) regressed wavelet coefficients  $d_{1,1}$

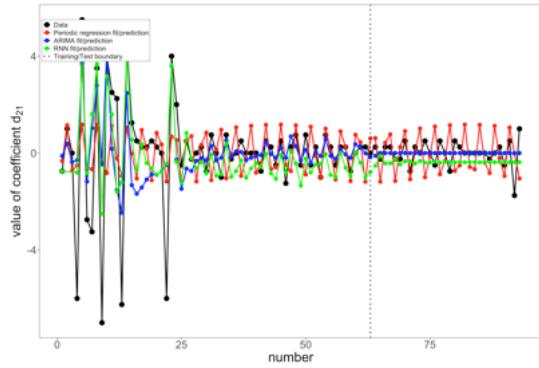


(h) regressed wavelet coefficients  $d_{0,0}$

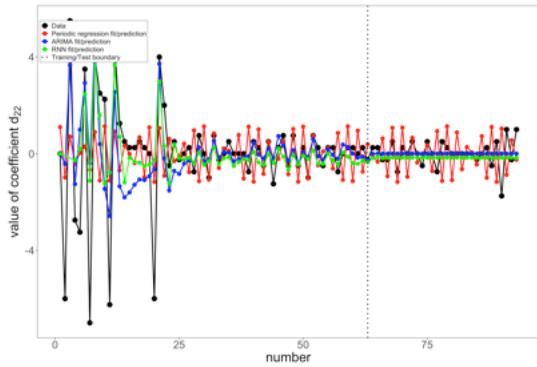
**Fig .27:** Regression result (dt, 30%, DS5)



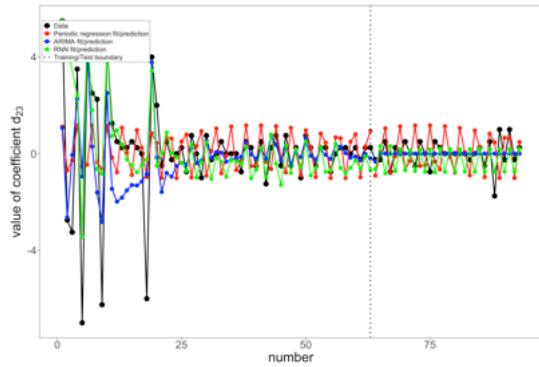
(a) regressed scaling coefficients  $c_{0,0}$



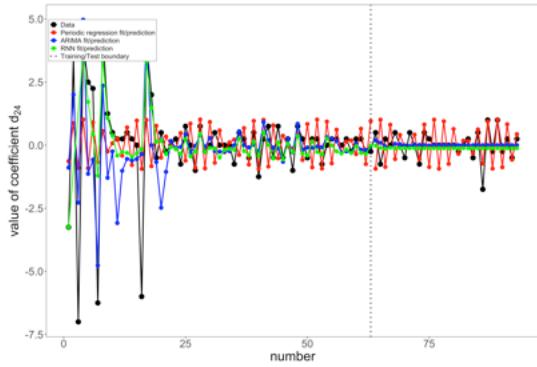
(b) regressed wavelet coefficients  $d_{2,0}$



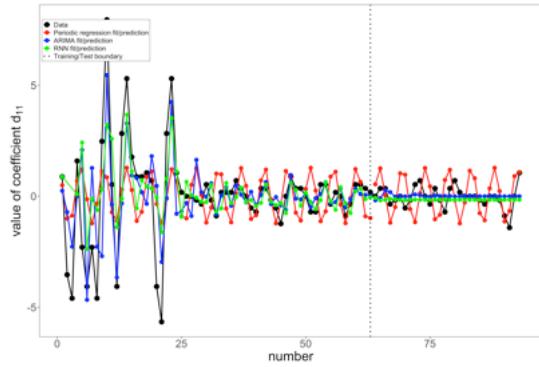
(c) regressed wavelet coefficients  $d_{2,1}$



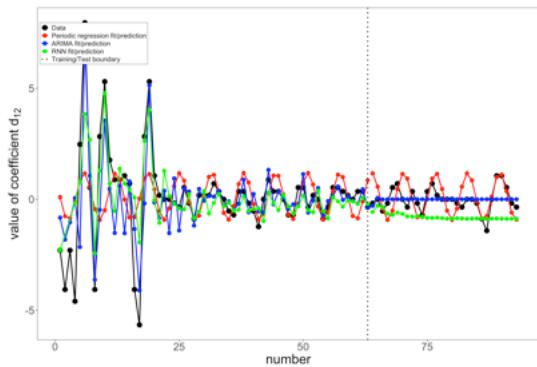
(d) regressed wavelet coefficients  $d_{2,2}$



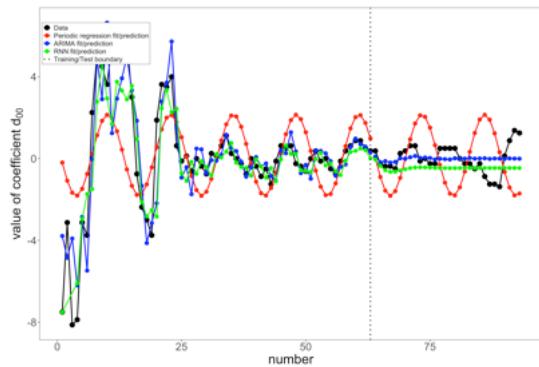
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

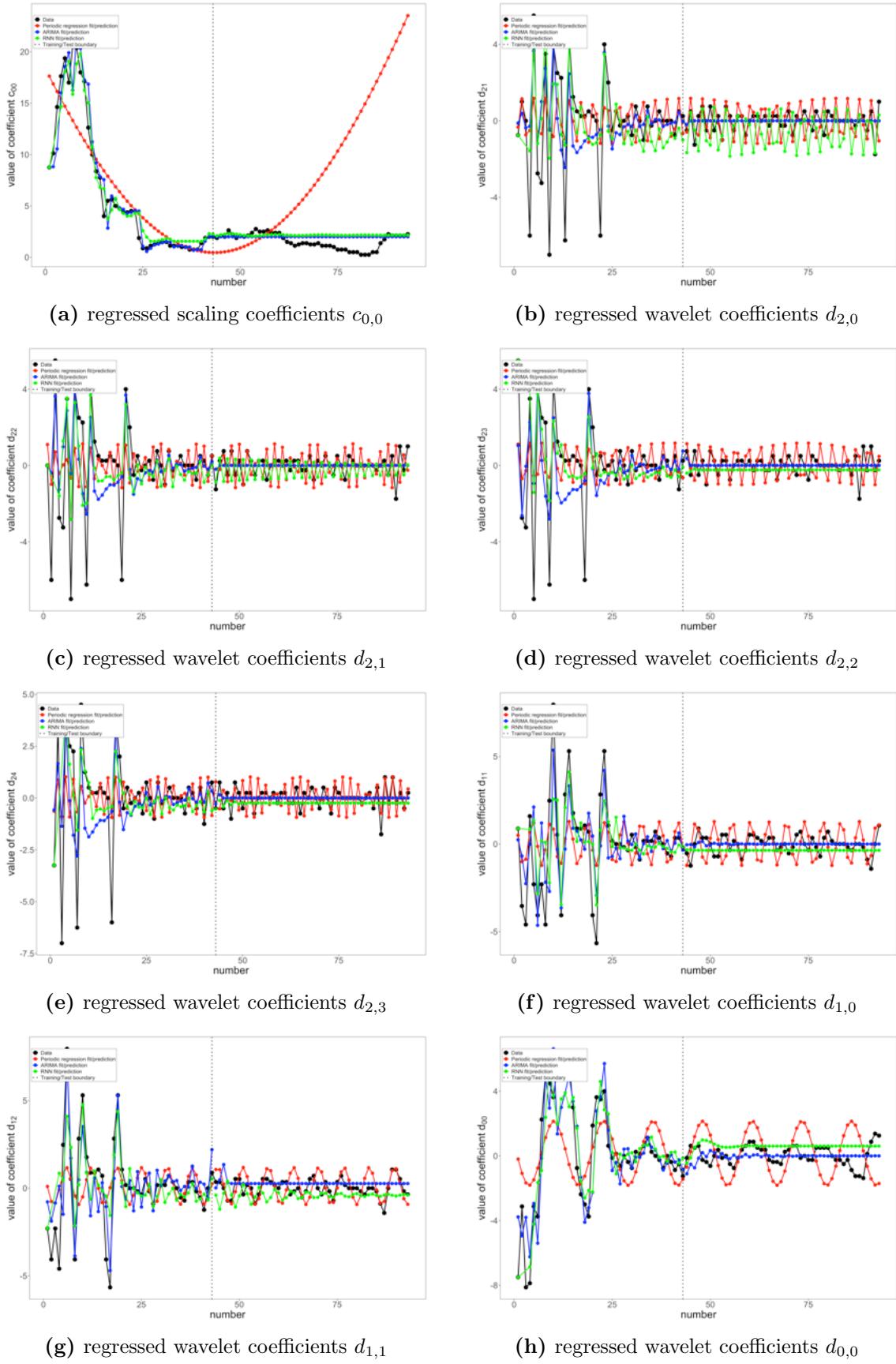


(g) regressed wavelet coefficients  $d_{1,1}$

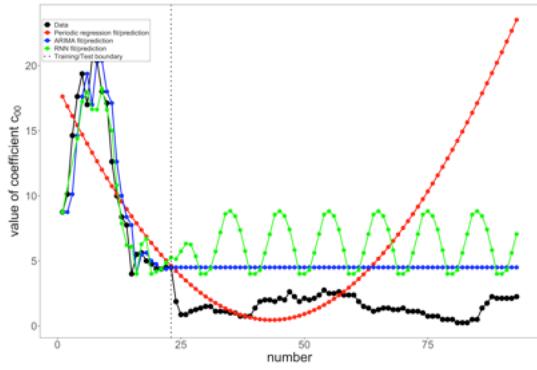


(h) regressed wavelet coefficients  $d_{0,0}$

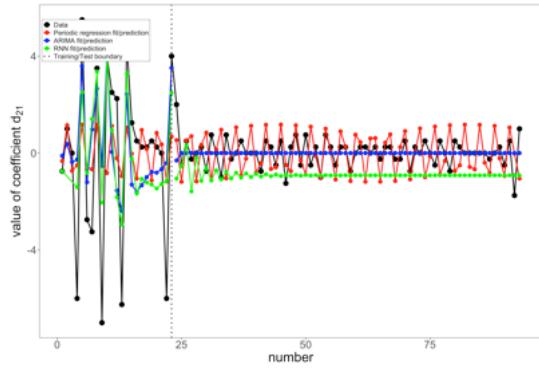
**Fig .28:** Regression result (ndt, 70%, DS5)



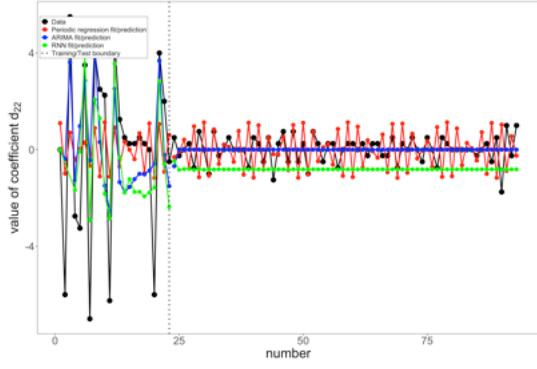
**Fig .29:** Regression result (ndt, 50%, DS5)



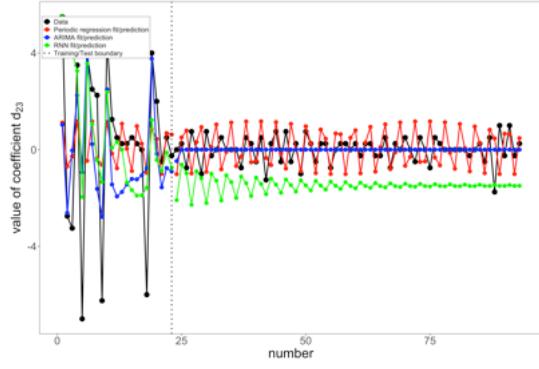
(a) regressed scaling coefficients  $c_{0,0}$



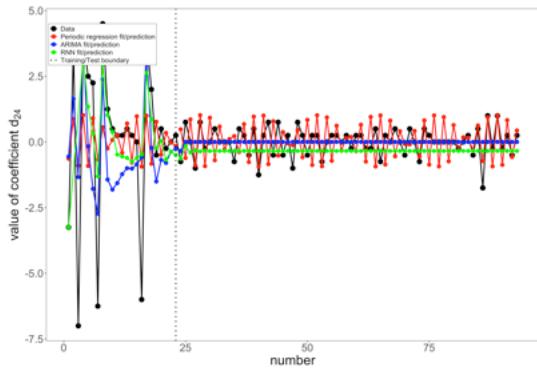
(b) regressed wavelet coefficients  $d_{2,0}$



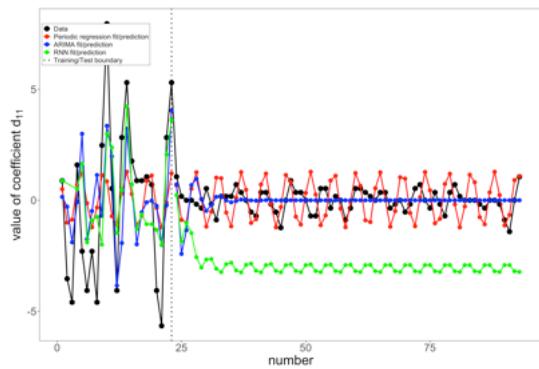
(c) regressed wavelet coefficients  $d_{2,1}$



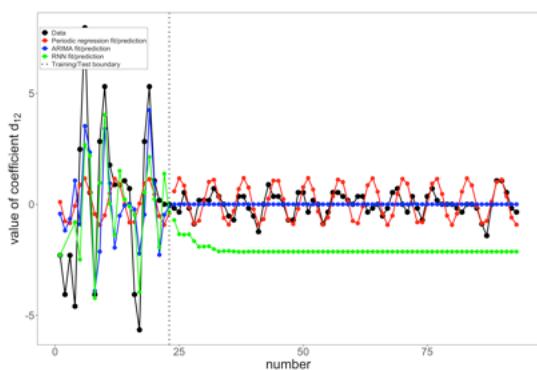
(d) regressed wavelet coefficients  $d_{2,2}$



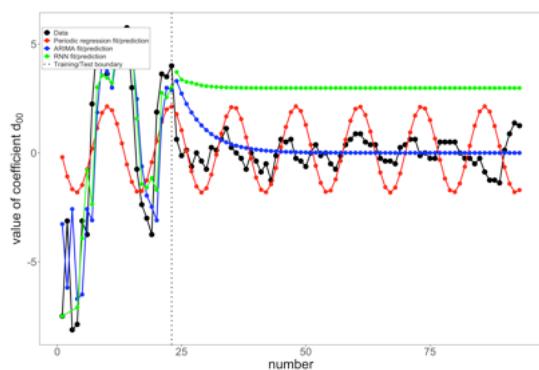
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

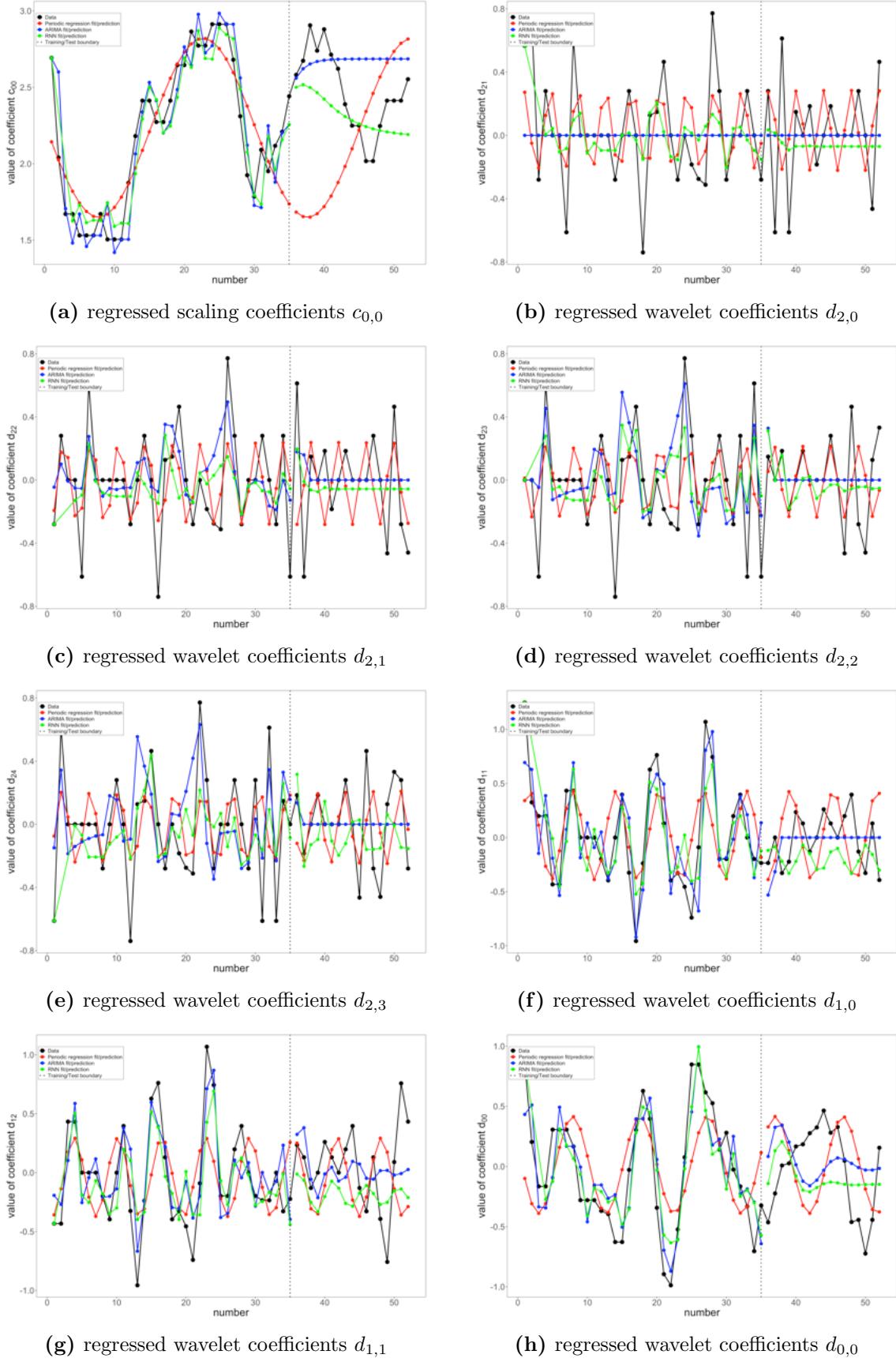


(g) regressed wavelet coefficients  $d_{1,1}$

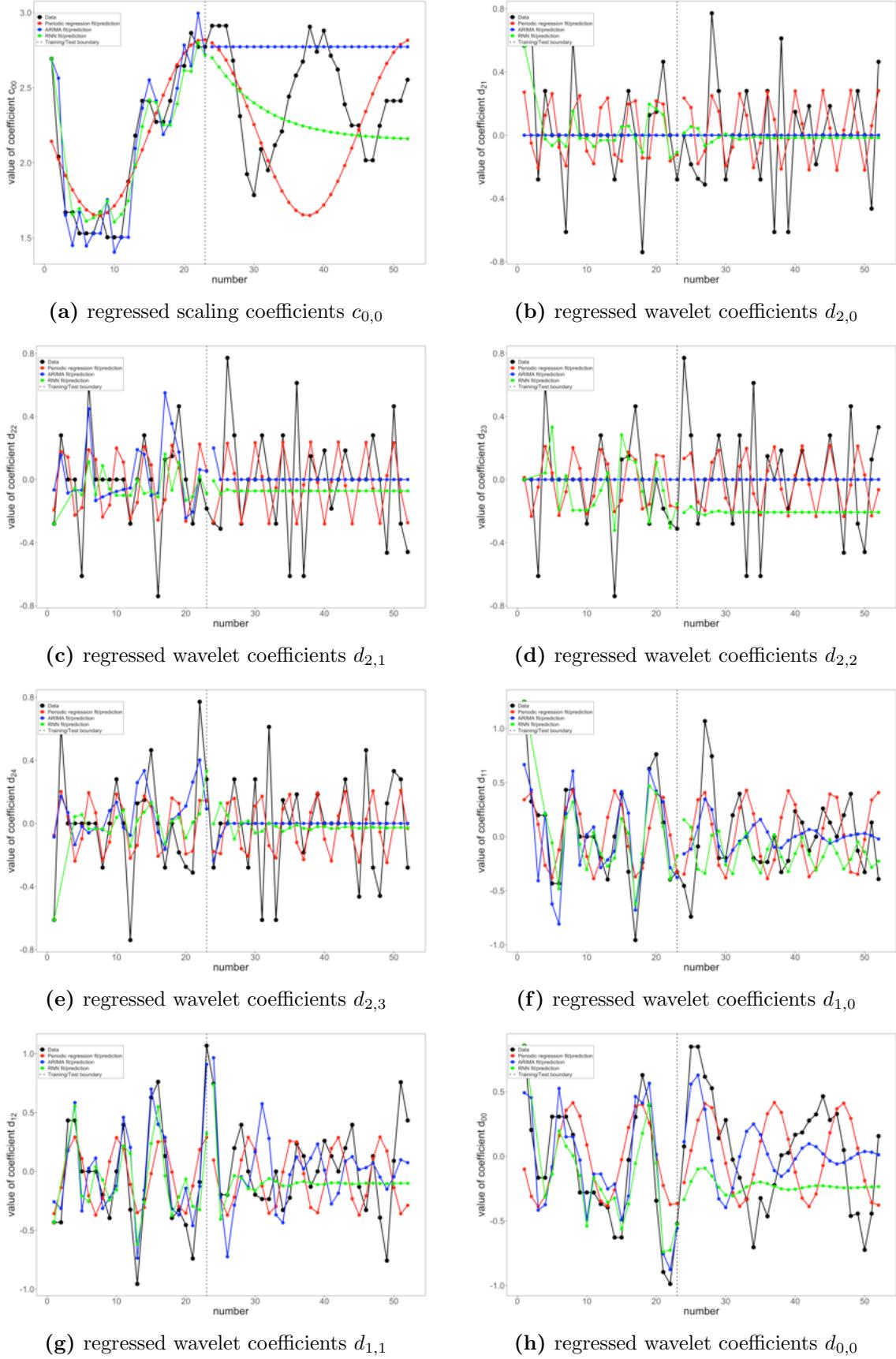


(h) regressed wavelet coefficients  $d_{0,0}$

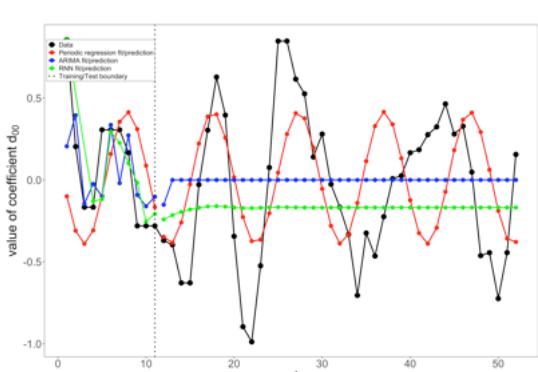
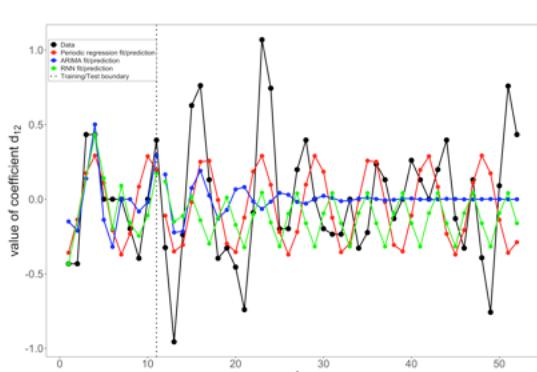
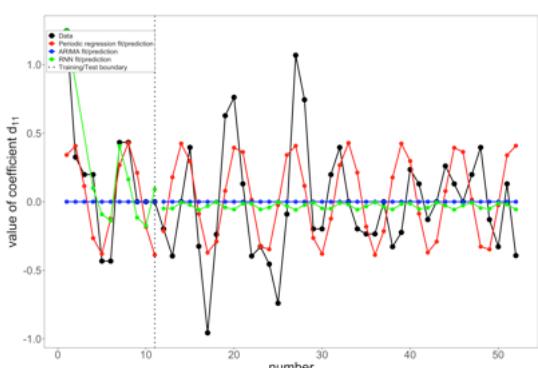
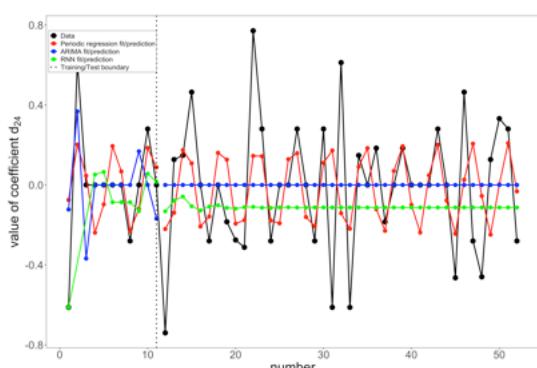
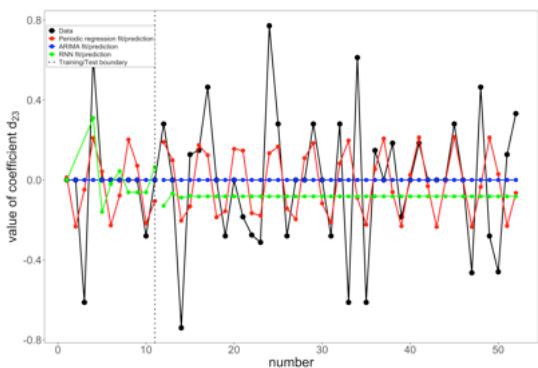
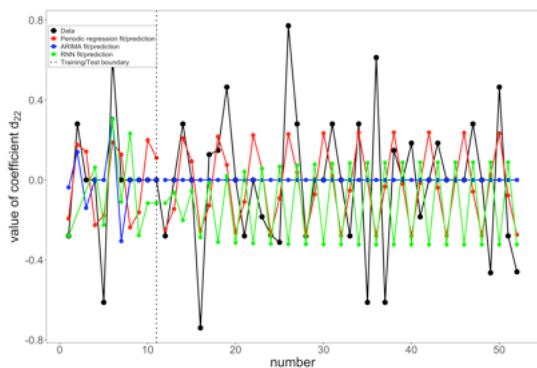
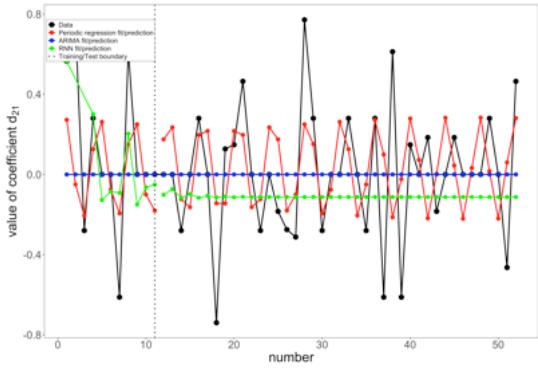
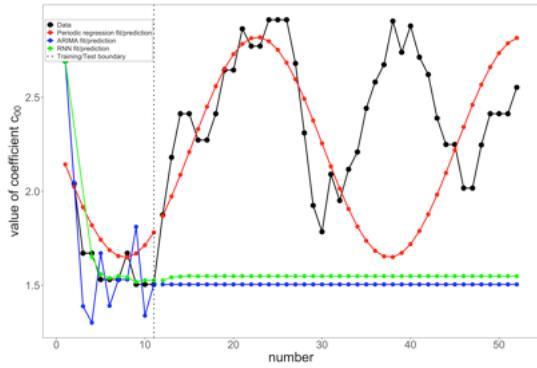
**Fig .30:** Regression result (ndt, 30%, DS5)



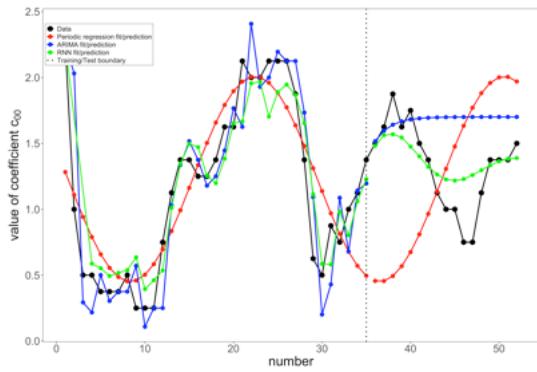
**Fig .31:** Regression result (dt, 70%, DS6)



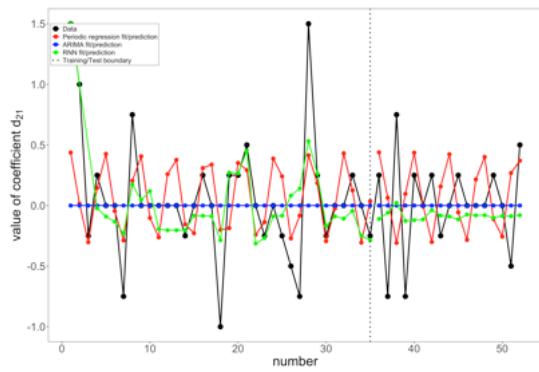
**Fig .32:** Regression result (dt, 50%, DS6)



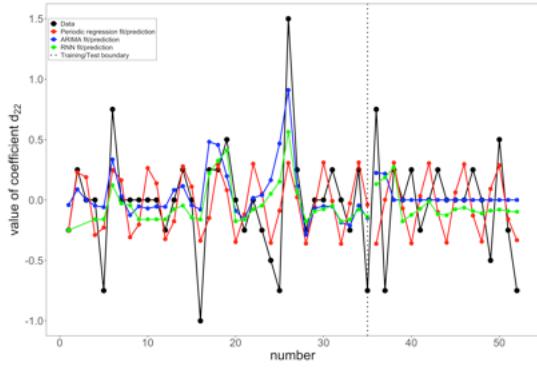
**Fig .33:** Regression result (dt, 30%, DS6)



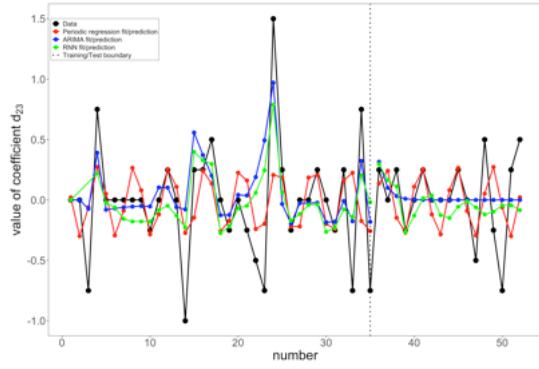
(a) regressed scaling coefficients  $c_{0,0}$



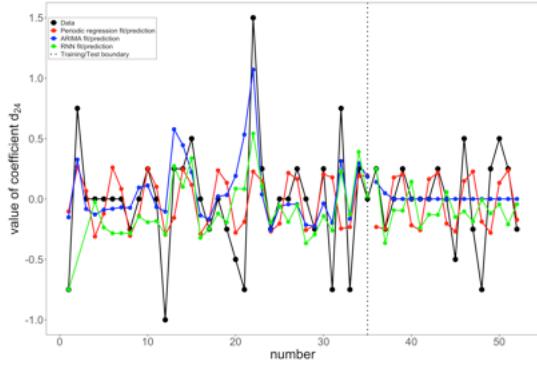
(b) regressed wavelet coefficients  $d_{2,0}$



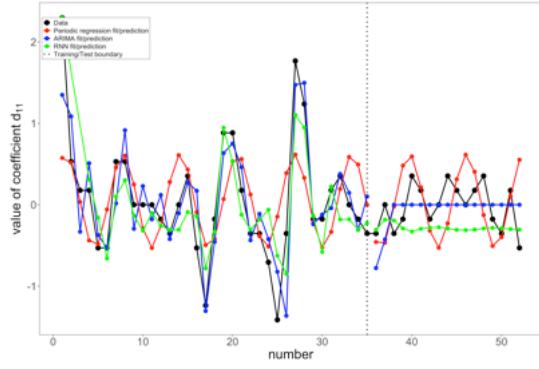
(c) regressed wavelet coefficients  $d_{2,1}$



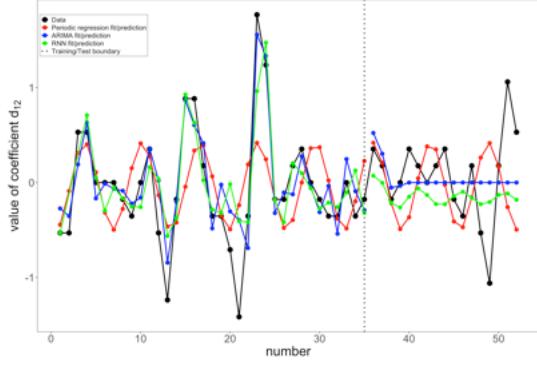
(d) regressed wavelet coefficients  $d_{2,2}$



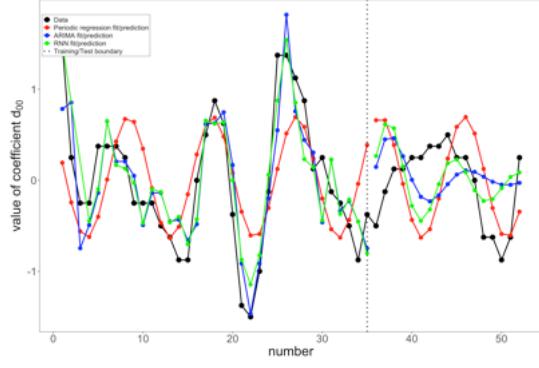
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

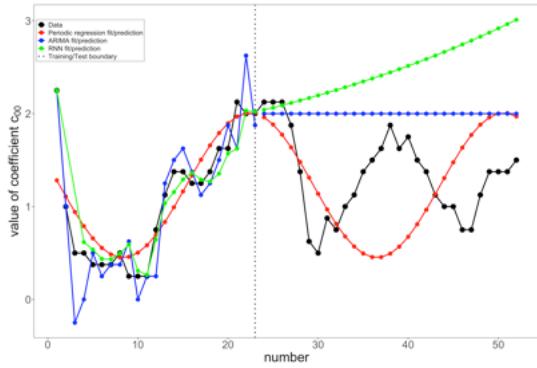


(g) regressed wavelet coefficients  $d_{1,1}$

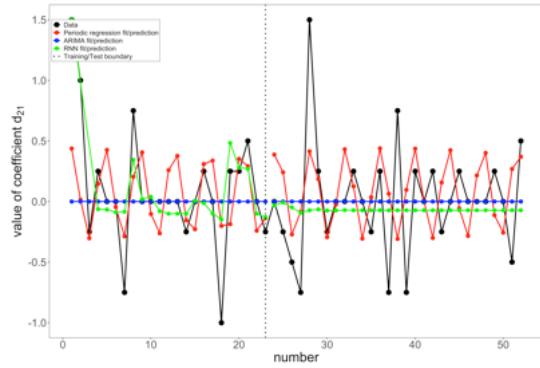


(h) regressed wavelet coefficients  $d_{0,0}$

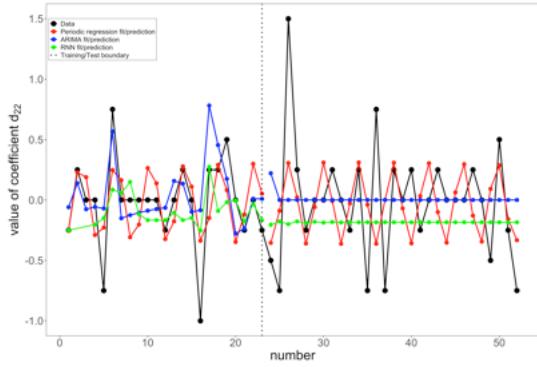
**Fig .34:** Regression result (ndt, 70%, DS6)



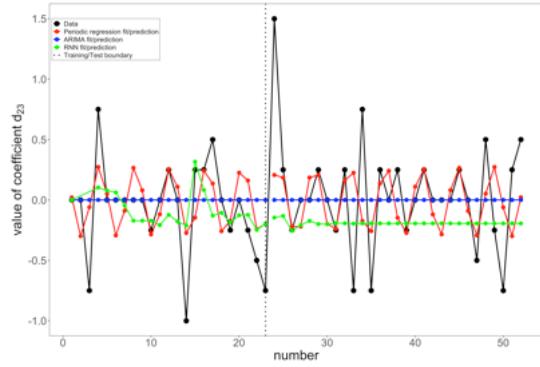
(a) regressed scaling coefficients  $c_{0,0}$



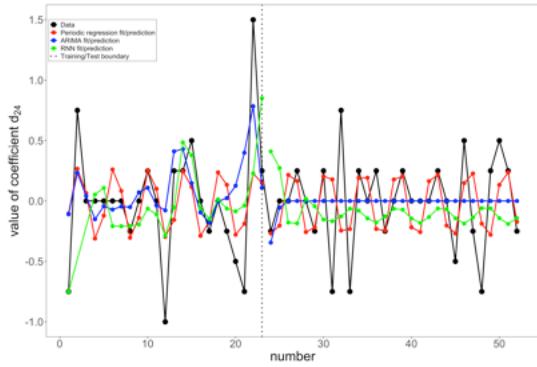
(b) regressed wavelet coefficients  $d_{2,0}$



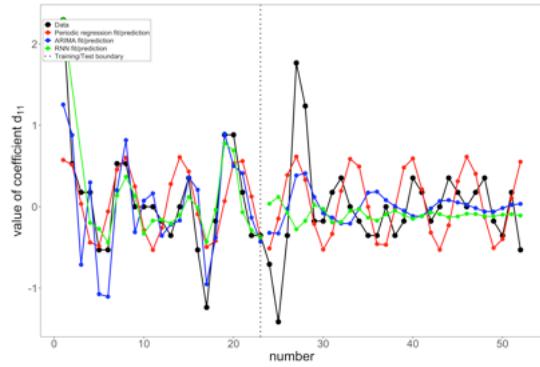
(c) regressed wavelet coefficients  $d_{2,1}$



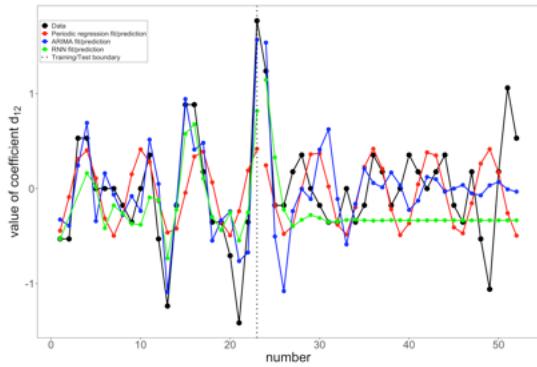
(d) regressed wavelet coefficients  $d_{2,2}$



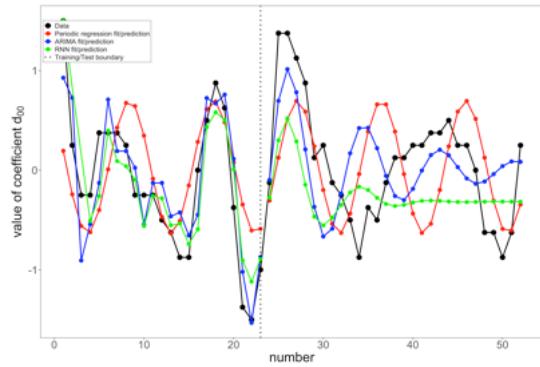
(e) regressed wavelet coefficients  $d_{2,3}$



(f) regressed wavelet coefficients  $d_{1,0}$

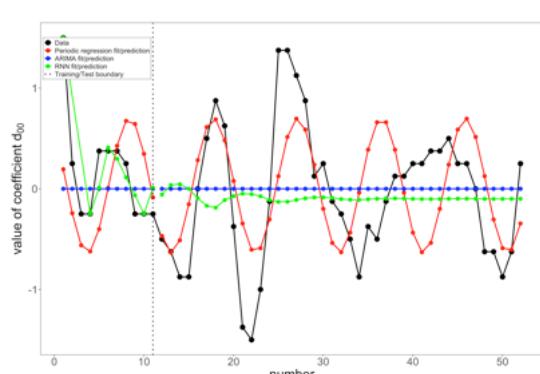
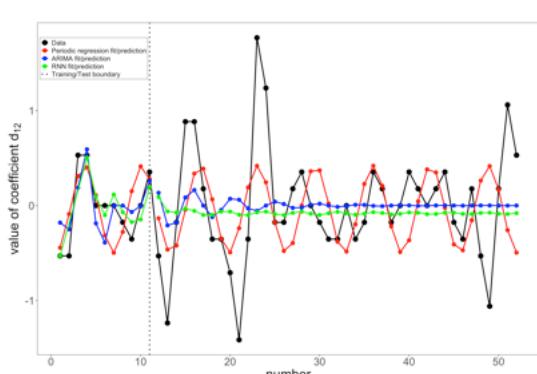
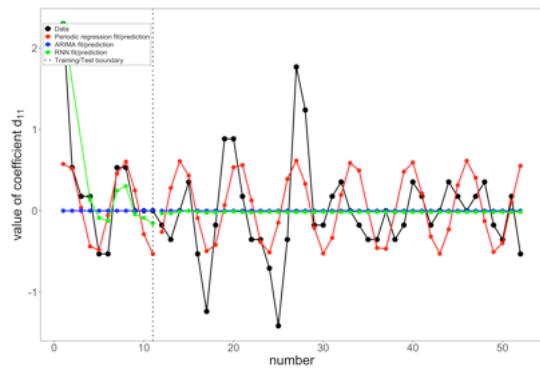
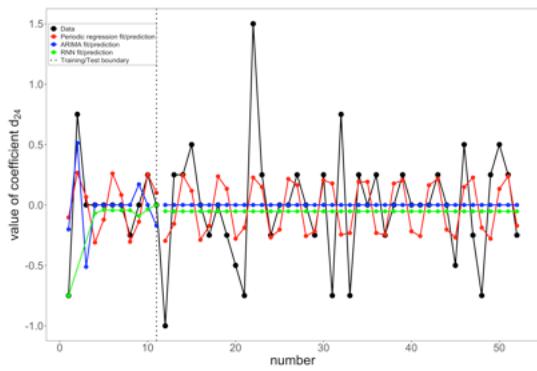
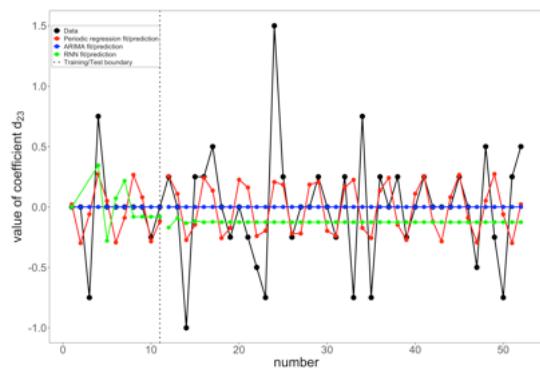
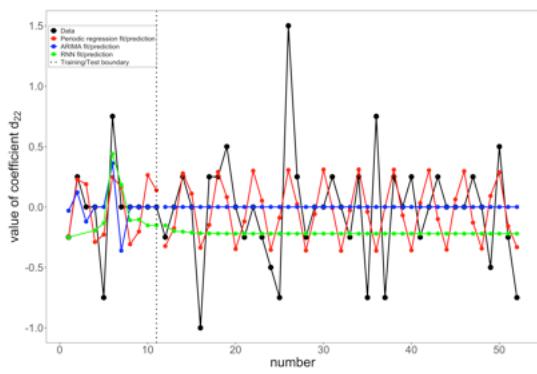
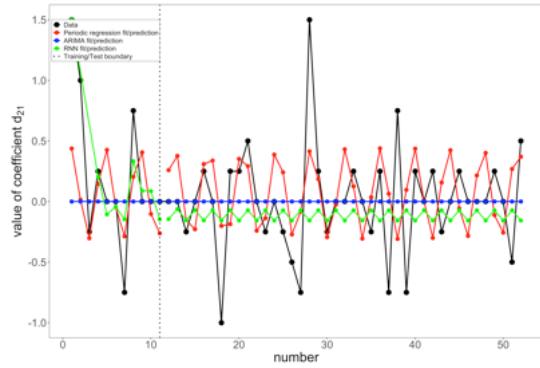
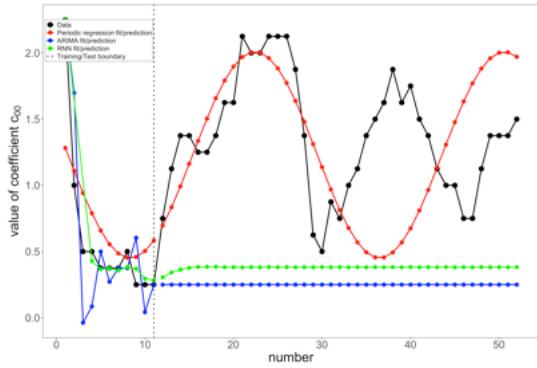


(g) regressed wavelet coefficients  $d_{1,1}$



(h) regressed wavelet coefficients  $d_{0,0}$

**Fig .35:** Regression result (ndt, 50%, DS6)



**Fig .36:** Regression result (ndt, 30%, DS6)