

Model Statistics, Data, and Plots

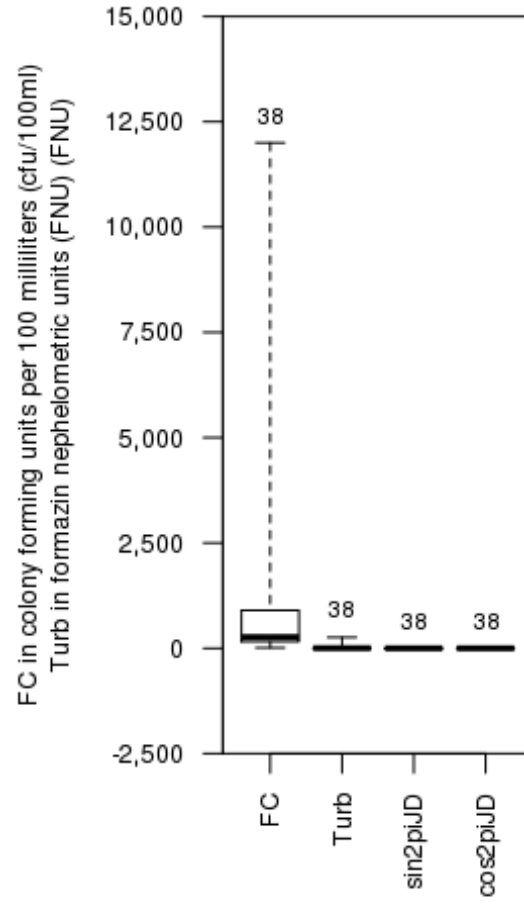
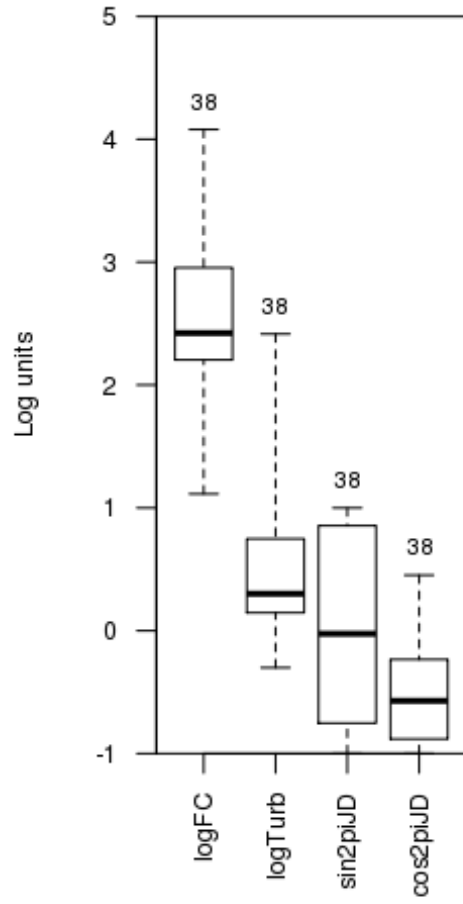
Model

$$\logFC = + 0.653 * \logTurb - 0.281 * \sin2\pi JD - 0.747 * \cos2\pi JD + 1.87$$

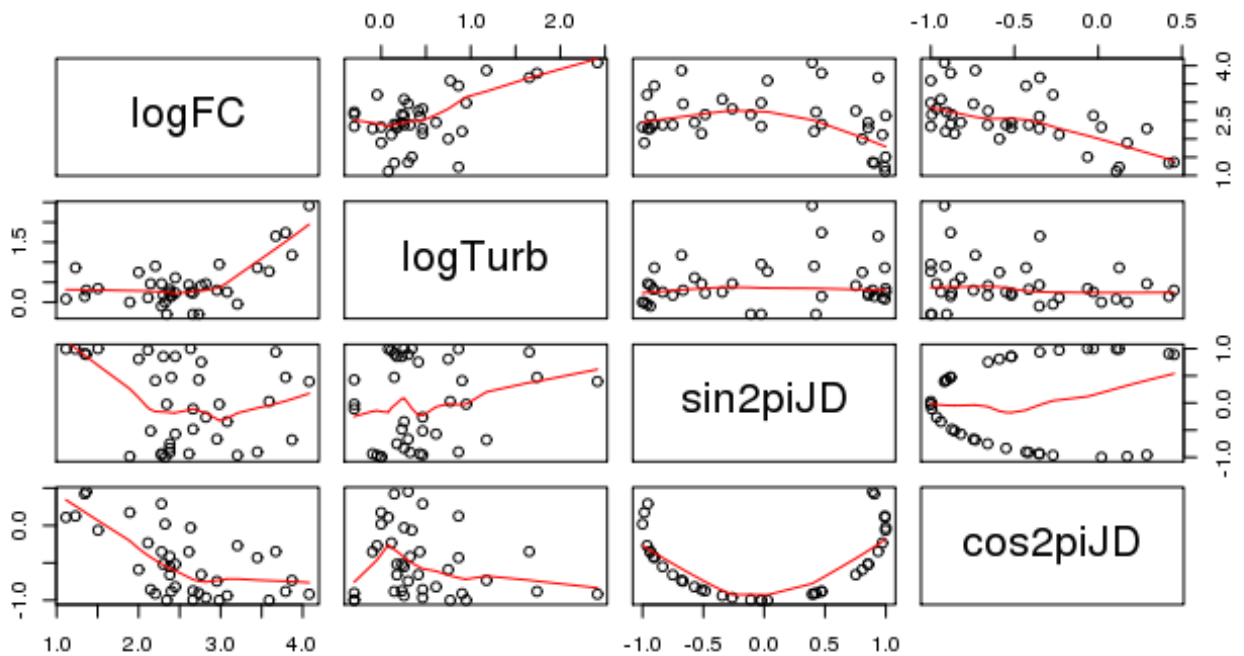
Variable Summary Statistics

	logFC	FC	logTurb	sin2piJD	cos2piJD	Turb
Minimum	1.11	13	-0.301	-1.00000	-1.000	0.5
1st Quartile	2.20	160	0.146	-0.75100	-0.881	1.4
Median	2.42	265	0.301	-0.02420	-0.570	2.0
Mean	2.54	1280	0.453	0.00814	-0.495	12.3
3rd Quartile	2.95	900	0.748	0.85500	-0.234	5.6
Maximum	4.08	12000	2.410	1.00000	0.453	260.0

Box Plots



Exploratory Plots



Basic Model Statistics

Number of Observations	38
Standard error (RMSE)	0.452
Average Model standard percentage error (MSPE)	124
Coefficient of determination (R^2)	0.642
Adjusted Coefficient of Determination (Adj. R^2)	0.61
Bias Correction Factor (BCF)	1.6

Variance Inflation Factors (VIF)

logTurb	sin2piJD	cos2piJD
1.09	1.07	1.08

Explanatory Variables

	Coefficients	Standard Error	t value	Pr(> t)
(Intercept)	1.870	0.119	15.70	3.73e-17
logTurb	0.653	0.136	4.79	3.17e-05
sin2piJD	-0.281	0.101	-2.78	8.82e-03
cos2piJD	-0.747	0.175	-4.26	1.52e-04

Correlation Matrix

	Intercept	logTurb	sin2piJD	cos2piJD
Intercept	1.0000	-0.346	-0.0397	0.608
logTurb	-0.3460	1.000	-0.2120	0.234
sin2piJD	-0.0397	-0.212	1.0000	-0.196
cos2piJD	0.6080	0.234	-0.1960	1.000

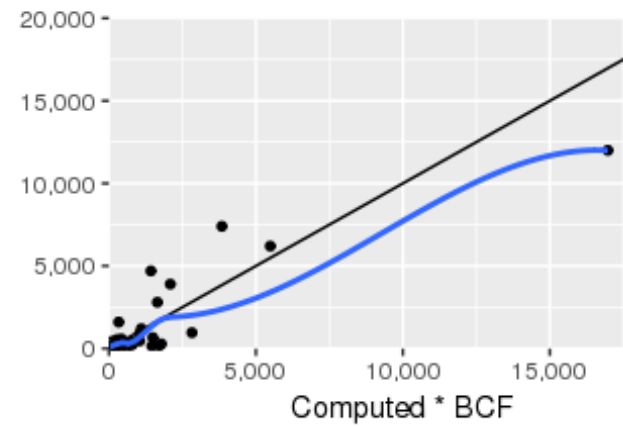
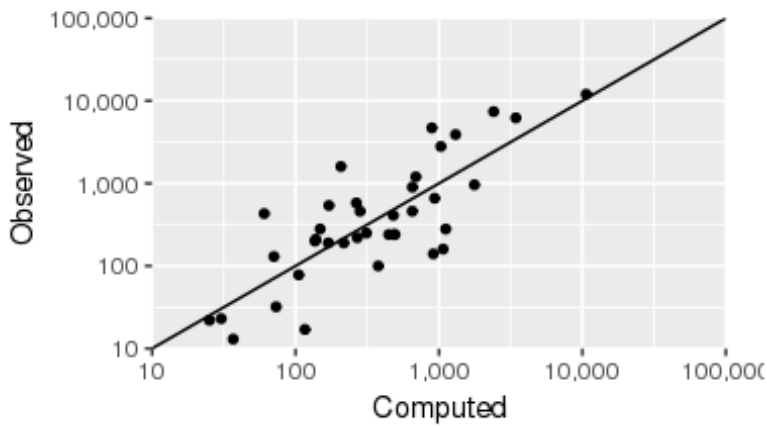
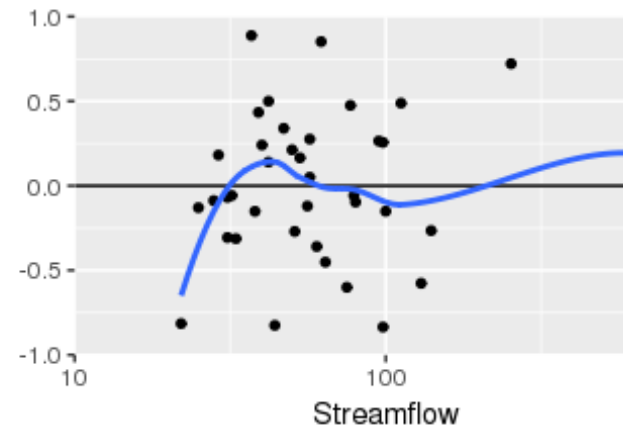
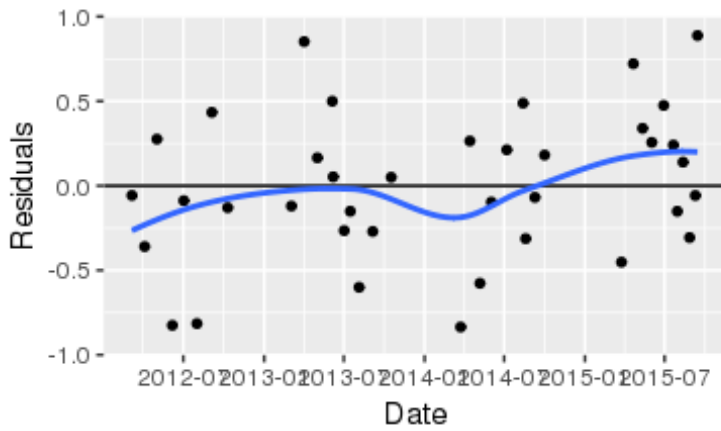
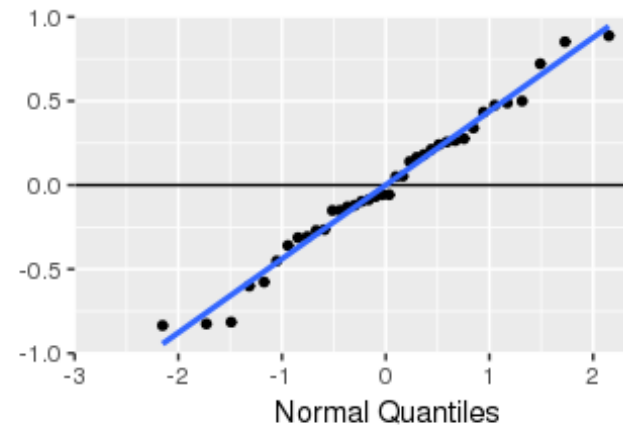
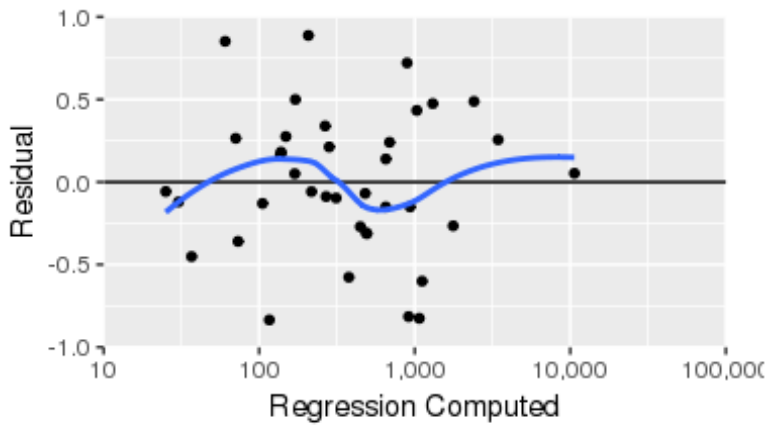
Outlier Test Criteria

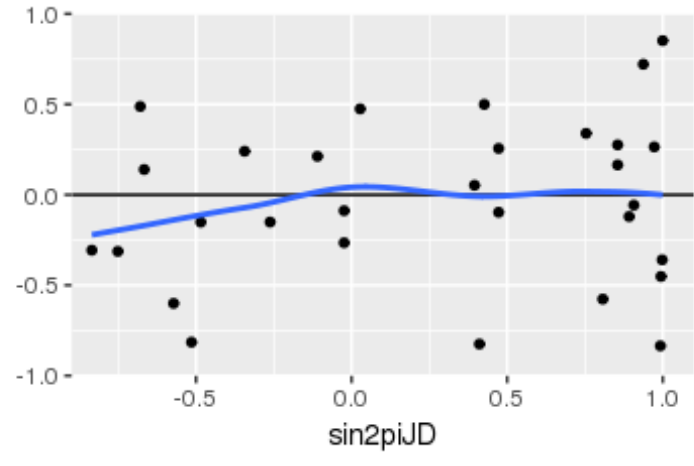
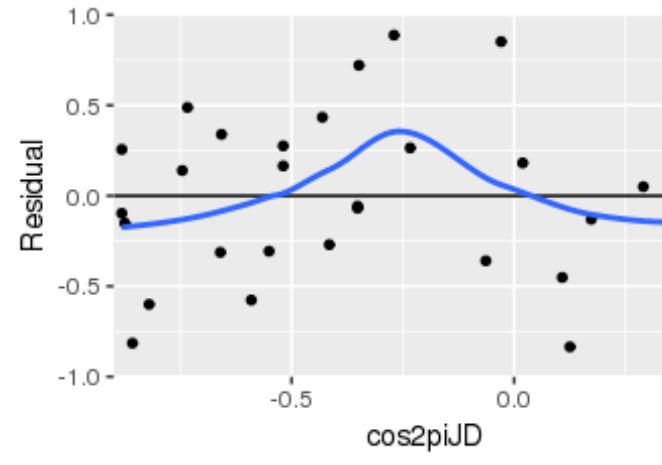
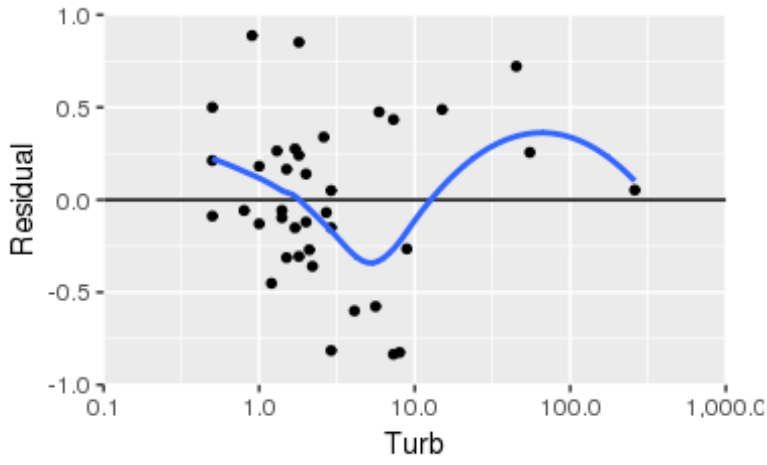
Leverage	Cook's D	DFFITS
0.237	0.262	0.562

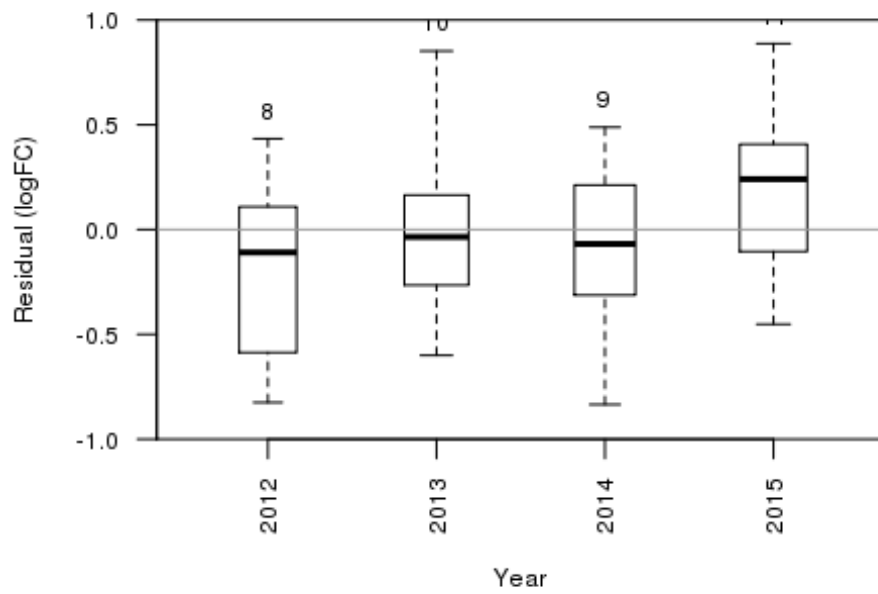
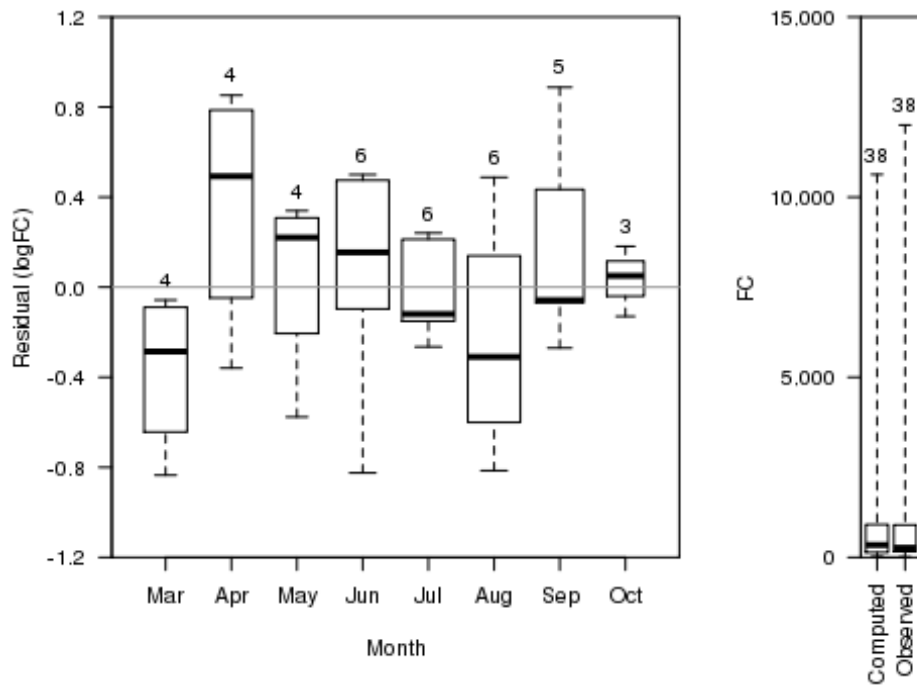
Flagged Observations

	logFC	Estimate	Residual	Standard Residual	Studentized
Residual	Leverage	Cook's D	DFFITS		
04/02/2013 09:15	2.63	1.78	0.8520	1.980	
2.080	0.0965	0.10500	0.678		
06/07/2013 10:45	4.08	4.03	0.0527	0.144	
0.142	0.3480	0.00278	0.104		
03/24/2014 12:30	1.23	2.07	-0.8350	-1.980	-
2.070	0.1290	0.14500	-0.799		
04/21/2015 11:15	3.67	2.95	0.7210	1.760	
1.820	0.1770	0.16500	0.841		
09/14/2015 11:00	3.20	2.32	0.8880	2.060	
2.170	0.0911	0.10600	0.686		

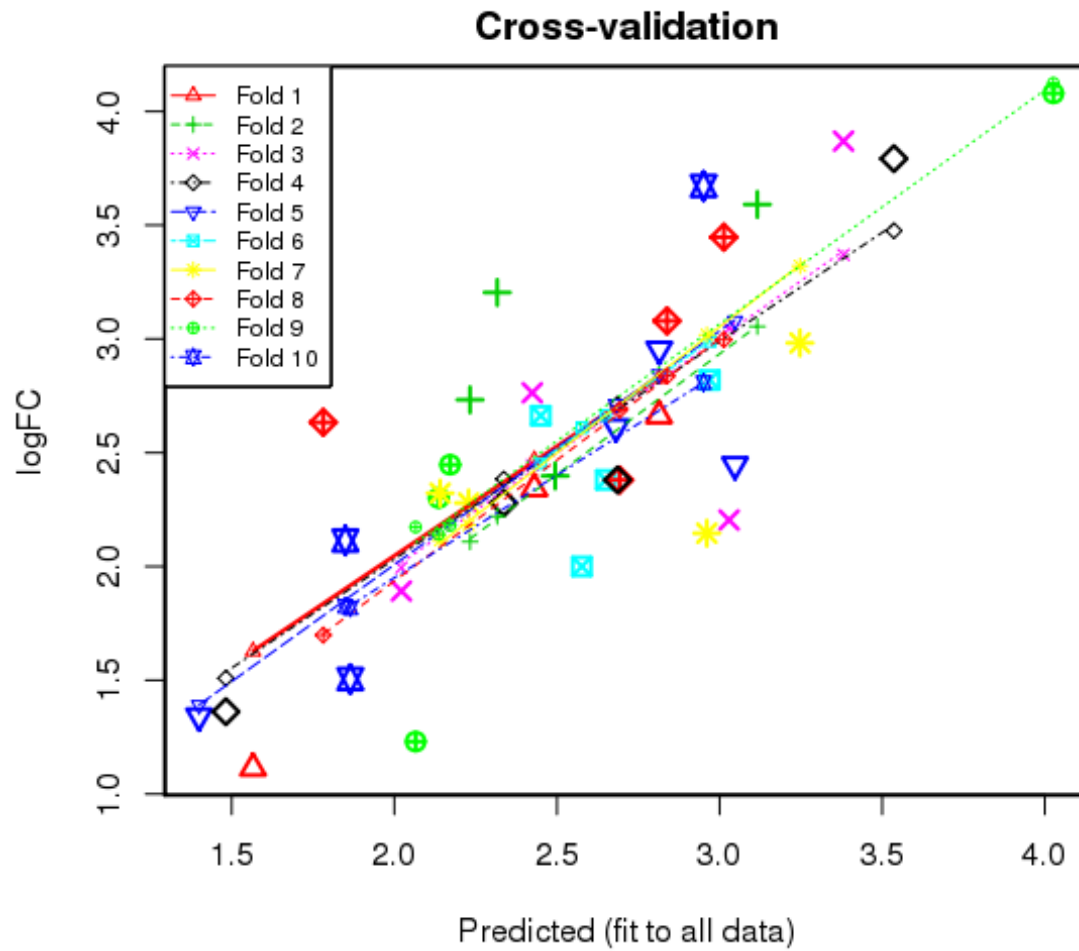
Statistical Plots



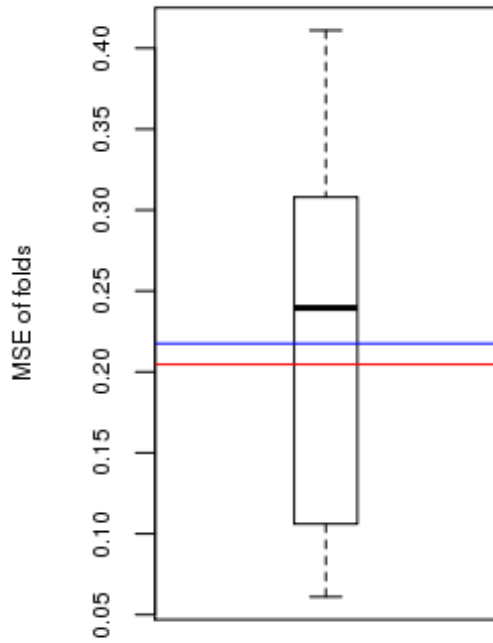




Cross Validation



Minimum MSE of folds: 0.061
Mean MSE of folds: 0.218
Median MSE of folds: 0.240
Maximum MSE of folds: 0.411
(Mean MSE of folds) / (Model MSE): 1.060



Red line - Model MSE

Blue line - Mean MSE of folds

Model-Calibration Data Set

Residual	Date	logFC	logTurb	sin2piJD	cos2piJD	FC	Turb	Computed	Computed
θ	Normal	Censored						logFC	FC
Quantiles	Values								
1	2012-03-06	1.34	0.146	0.907	0.422	22	1.4	1.4	40.1
	-0.0572	0.0328	--						
2	2012-04-04	1.51	0.342	0.998	-0.0637	32	2.2	1.86	117
	-0.359	-0.943	--						
3	2012-05-02	2.45	0.23	0.855	-0.519	280	1.7	2.17	237
	0.276	0.755	--						
4	2012-06-06	2.2	0.903	0.411	-0.912	160	8	3.03	1710
	-0.825	-1.73	--						

5	2012-07-02	2.34	-0.301	-0.0242	-1	220	0.5	2.43	430
	-0.088	-0.165	--						
6	2012-08-01	2.15	0.462	-0.514	-0.858	140	2.9	2.96	1460
	-0.815	-1.49	--						
7	2012-09-04	3.45	0.863	-0.902	-0.431	2800	7.3	3.01	1650
	0.434	0.943	--						
8	2012-10-10	1.89	0	-0.985	0.173	78	1	2.02	168
	-0.13	-0.369	--						
9	2013-03-04	1.36	0.301	0.892	0.453	23	2	1.48	48.4
	-0.12	-0.3	--						
10	2013-04-02	2.63	0.255	1	-0.0293	430	1.8	1.78	96.6
	0.852	1.73	--						
11	2013-05-02	2.3	0.176	0.855	-0.519	200	1.5	2.14	218
	0.165	0.3	--						
12	2013-06-05	2.73	-0.301	0.426	-0.905	540	0.5	2.23	273
	0.5	1.32	--						
13	2013-06-07	4.08	2.41	0.395	-0.919	12000	260	4.03	17000
	0.0527	0.165	--						
14	2013-07-02	2.98	0.949	-0.0242	-1	960	8.9	3.25	2820
	-0.265	-0.59	--						
15	2013-07-16	2.82	0.462	-0.262	-0.965	660	2.9	2.97	1490
	-0.151	-0.44	--						
16	2013-08-05	2.45	0.613	-0.572	-0.82	280	4.1	3.05	1780
	-0.6	-1.32	--						
17	2013-09-05	2.38	0.322	-0.91	-0.415	240	2.1	2.65	714
	-0.27	-0.67	--						
18	2013-10-17	2.28	0.462	-0.957	0.29	190	2.9	2.23	270
	0.0503	0.0986	--						
19	2014-03-24	1.23	0.863	0.992	0.125	17	7.3	2.07	186
	-0.835	-2.15	--						
20	2014-04-14	2.11	0.114	0.972	-0.234	130	1.3	1.85	113
	0.265	0.67	--						
21	2014-05-07	2	0.748	0.807	-0.59	100	5.6	2.58	602
	-0.576	-1.17	--						
22	2014-06-02	2.4	0.146	0.472	-0.881	250	1.4	2.49	499
	-0.0967	-0.232	--						
23	2014-07-07	2.66	-0.301	-0.11	-0.994	460	0.5	2.45	450
	0.213	0.44	--						
24	2014-08-13	3.87	1.18	-0.679	-0.734	7400	15	3.38	3840
	0.488	1.17	--						
25	2014-08-19	2.38	0.176	-0.751	-0.66	240	1.5	2.69	787
	-0.313	-0.845	--						
26	2014-09-09	2.61	0.431	-0.936	-0.352	410	2.7	2.68	767
	-0.0688	-0.0986	--						
27	2014-10-01	2.32	0	-1	0.0191	210	1	2.14	221
	0.181	0.369	--						
28	2015-03-25	1.11	0.0792	0.994	0.108	13	1.2	1.57	58.7
	-0.451	-1.05	--						
29	2015-04-21	3.67	1.65	0.937	-0.349	4700	45	2.95	1430
	0.721	1.49	--						

30	2015-05-12	2.76	0.415	0.753	-0.658	580	2.6	2.42	424
0.339	0.845	--							
31	2015-06-02	3.79	1.74	0.472	-0.881	6200	55	3.54	5490
0.256	0.59	--							
32	2015-06-29	3.59	0.771	0.0274	-1	3900	5.9	3.12	2090
0.475	1.05	--							
33	2015-07-21	3.08	0.255	-0.344	-0.939	1200	1.8	2.84	1100
0.241	0.514	--							
34	2015-07-30	2.66	0.23	-0.485	-0.875	460	1.7	2.81	1040
-0.151	-0.514	--							
35	2015-08-12	2.95	0.301	-0.667	-0.745	900	2	2.81	1040
0.14	0.232	--							
36	2015-08-27	2.38	0.255	-0.835	-0.551	240	1.8	2.69	776
-0.306	-0.755	--							
37	2015-09-09	2.28	-0.0969	-0.936	-0.352	190	0.8	2.34	347
-0.0577	-0.0328	--							
38	2015-09-14	3.2	-0.0458	-0.963	-0.27	1600	0.9	2.32	331
0.888	2.15	--							

Definitions

FC: Fecal coliforms in cfu/100ml (31625)

Turb: Turbidity in FNU (63680)

DY: Date in decimal years

App Version 1.0