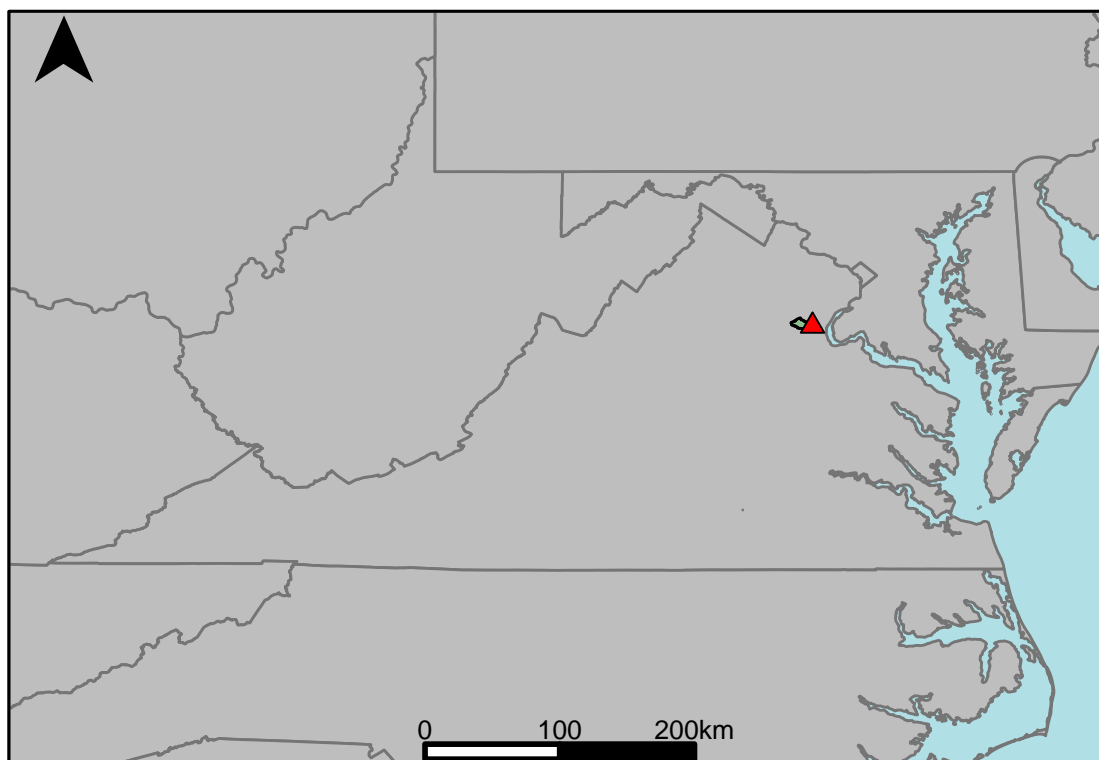


Appendix B.21: USGS Gage 01660400 vs. PL0_5730_5690 Lower Potomac River



This river segment follows part of the flow of the Aquia Creek, a tributary of the Potomac. The gage is located in Stafford County (Lat. $38^{\circ}29'25.4''$, Long. $-77^{\circ}26'00.9''$), approximately 8 miles southwest of Dumfries, VA. Drainage area is 35 sq. miles. This gage started taking data in 1971 and is still taking data. There are no known anthropogenic alterations in this area that would affect the flow conditions. The average daily discharge error between the model and gage data for the 20 year timespan was -0.6%, with 58.3% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	1.8	1.9	5.56
Feb. Low Flow	6.1	5.98	-1.97
Mar. Low Flow	11	9.67	-12.1
Apr. Low Flow	15	15.4	2.67
May Low Flow	21	20.4	-2.86
Jun. Low Flow	18	15.4	-14.4
Jul. Low Flow	20	11	-45
Aug. Low Flow	11	6.71	-39
Sep. Low Flow	4.5	3.1	-31.1
Oct. Low Flow	1.8	0.96	-46.7
Nov. Low Flow	1.4	1.24	-11.4
Dec. Low Flow	0.75	0.85	13.9

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	33.3	33.5	0.6
Jan. Mean Flow	46.5	46.7	0.43
Feb. Mean Flow	47.2	54.6	15.7
Mar. Mean Flow	59.2	60.8	2.7
Apr. Mean Flow	49.7	40.1	-19.3
May Mean Flow	39.3	32.9	-16.3
Jun. Mean Flow	19.9	17.2	-13.6
Jul. Mean Flow	15.3	14.9	-2.61
Aug. Mean Flow	10.7	13.2	23.4
Sep. Mean Flow	18.5	24.1	30.3
Oct. Mean Flow	17.3	20.7	19.7
Nov. Mean Flow	35.1	33.8	-3.7
Dec. Mean Flow	40.7	43.6	7.13

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	33	46.6	41.2
Feb. High Flow	225	185	-17.8
Mar. High Flow	174	183	5.17
Apr. High Flow	235	193	-17.9
May High Flow	137	140	2.19
Jun. High Flow	227	248	9.25
Jul. High Flow	218	121	-44.5
Aug. High Flow	136	97.6	-28.2
Sep. High Flow	62.2	48.3	-22.3
Oct. High Flow	80	38	-52.5
Nov. High Flow	48	36.8	-23.3
Dec. High Flow	24	45.4	89.2

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	0	0	NaN
Med. 1 Day Min	0.32	0.09	-71.7
Min. 3 Day Min	0.01	0	-100
Med. 3 Day Min	0.36	0.16	-53.9
Min. 7 Day Min	0.01	0	-100
Med. 7 Day Min	0.46	0.33	-28.6
Min. 30 Day Min	0.08	0.21	153
Med. 30 Day Min	0.98	1.94	98.4
Min. 90 Day Min	0.62	2.31	276
Med. 90 Day Min	6.4	7.07	10.5
7Q10	0.03	0	-99.3
Year of 90-Day Min. Flow	1998	1991	100
Drought Year Mean	0.62	3.31	438
Mean Baseflow	13.5	12.8	-5.19

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	1810	1750	-3.31
Med. 1 Day Max	638	514	-19.4
Max. 3 Day Max	700	738	5.43
Med. 3 Day Max	308	260	-15.6
Max. 7 Day Max	354	526	48.6
Med. 7 Day Max	189	174	-7.94
Max. 30 Day Max	179	238	33
Med. 30 Day Max	86	87.6	1.86
Max. 90 Day Max	112	154	37.5
Med. 90 Day Max	55.8	56.5	1.25

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	0.06	0	-100
5% Non-Exceedance	0.59	0.79	33.7
50% Non-Exceedance	17	16.2	-4.71
95% Non-Exceedance	111	108	-2.7
99% Non-Exceedance	299	297	-0.67
Sept. 10% Non-Exceedance	0.18	0.25	40.6

Fig. 1: Hydrograph

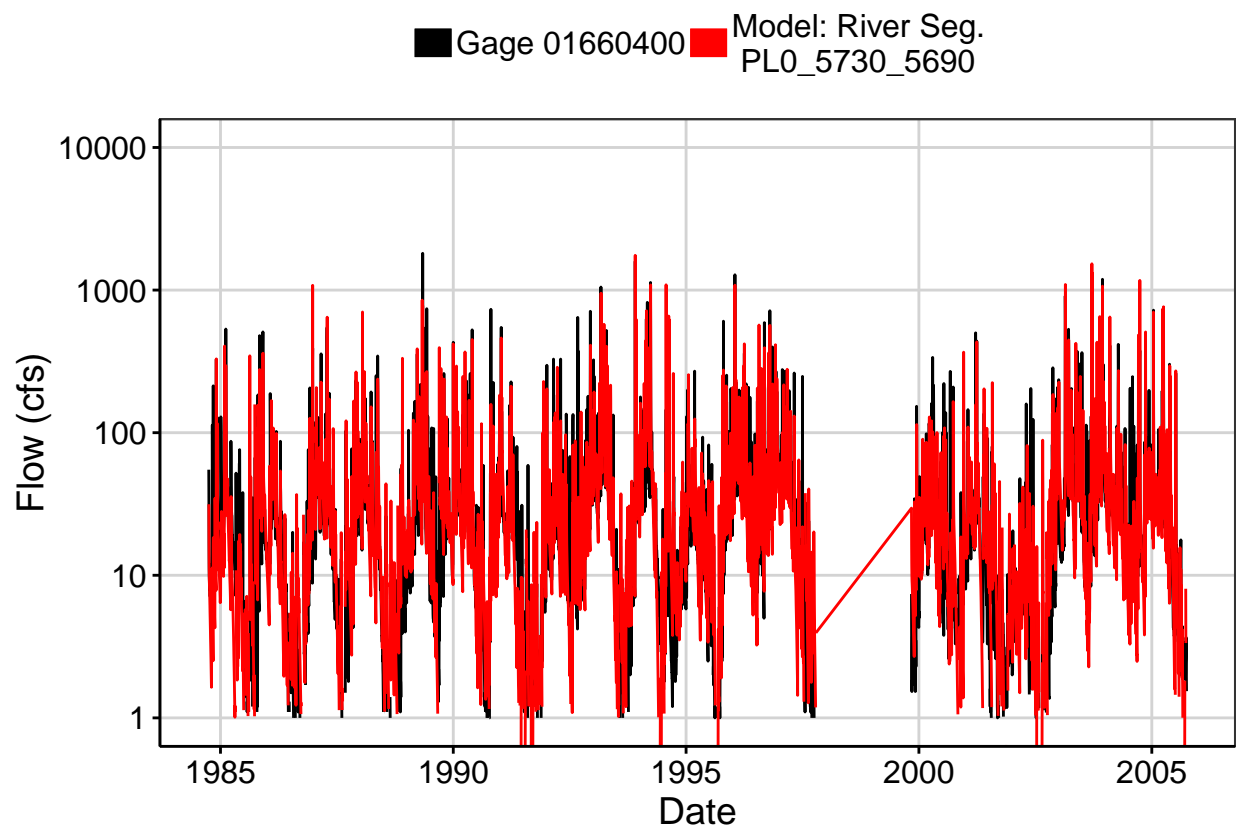


Fig. 2: Zoomed Hydrograph

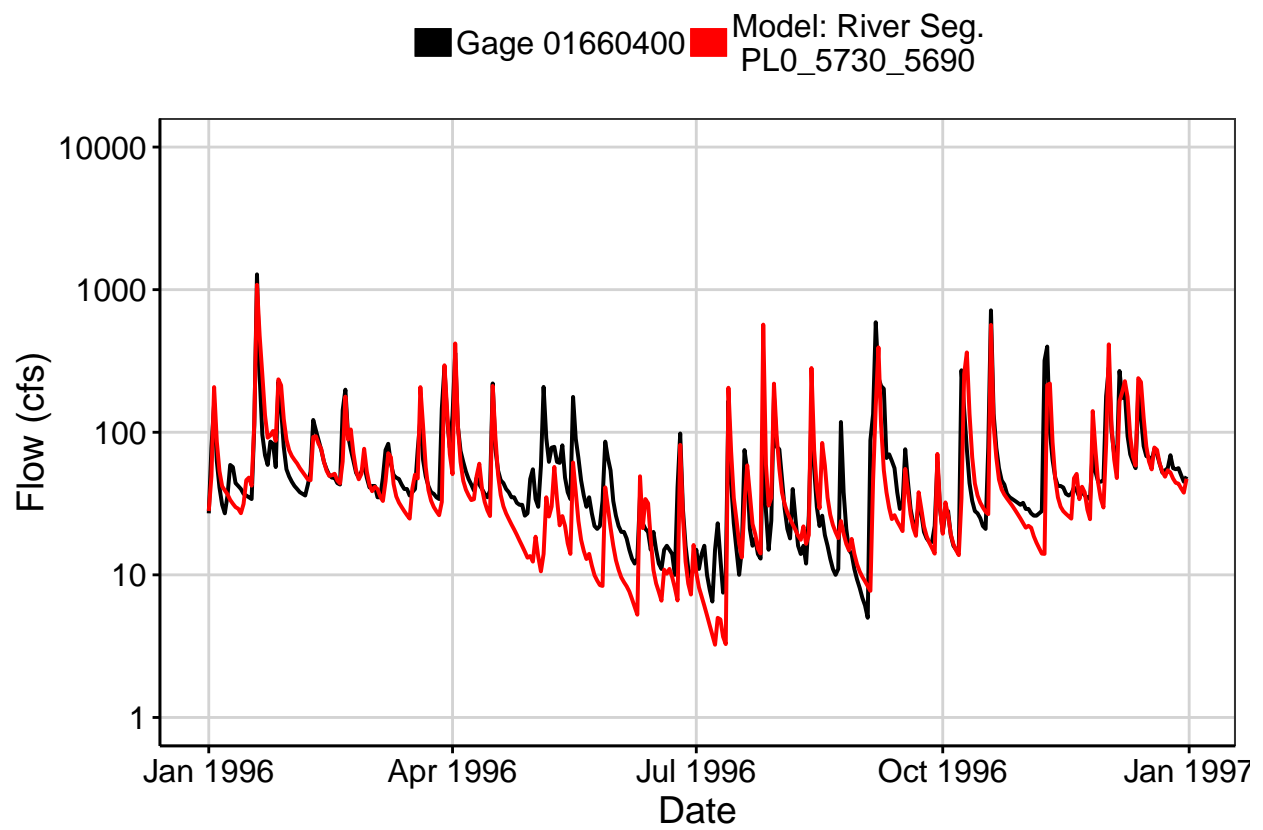


Fig. 3: Flow Exceedance

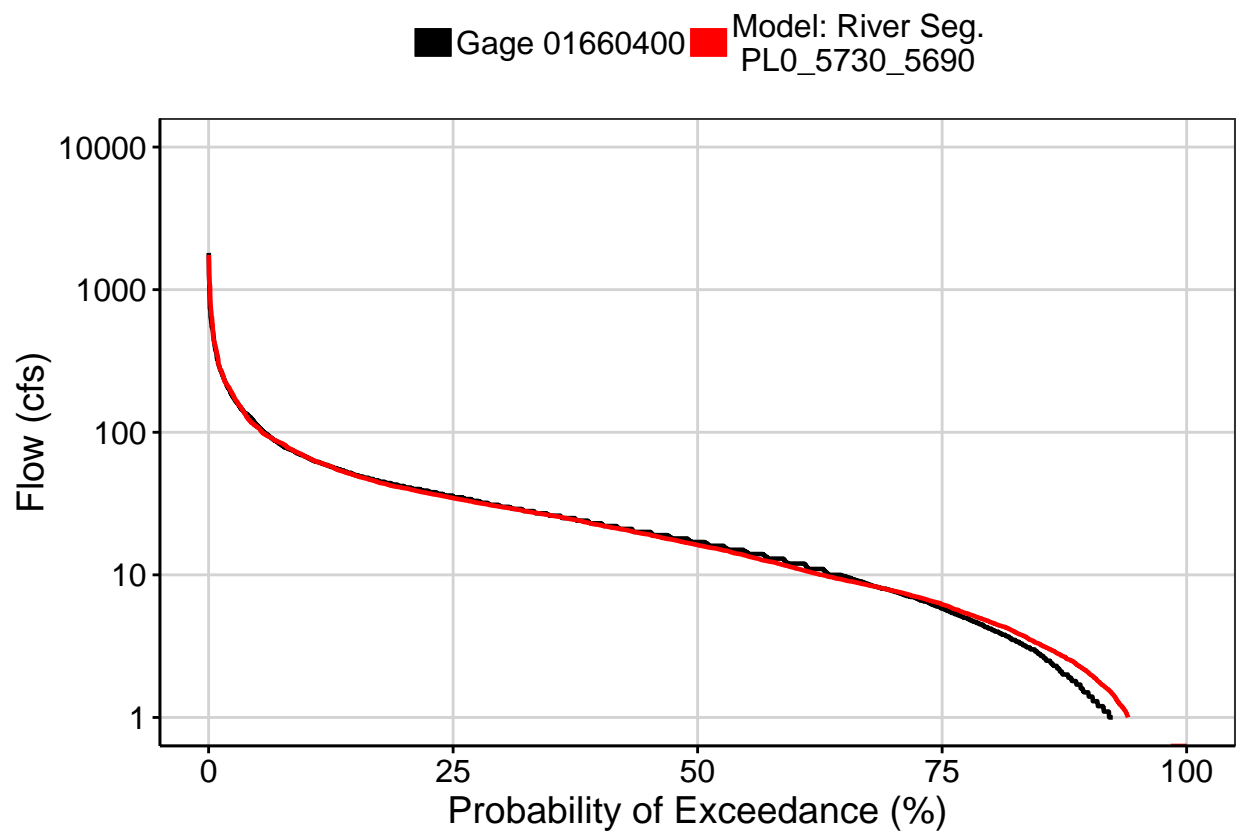


Fig. 4: Baseflow

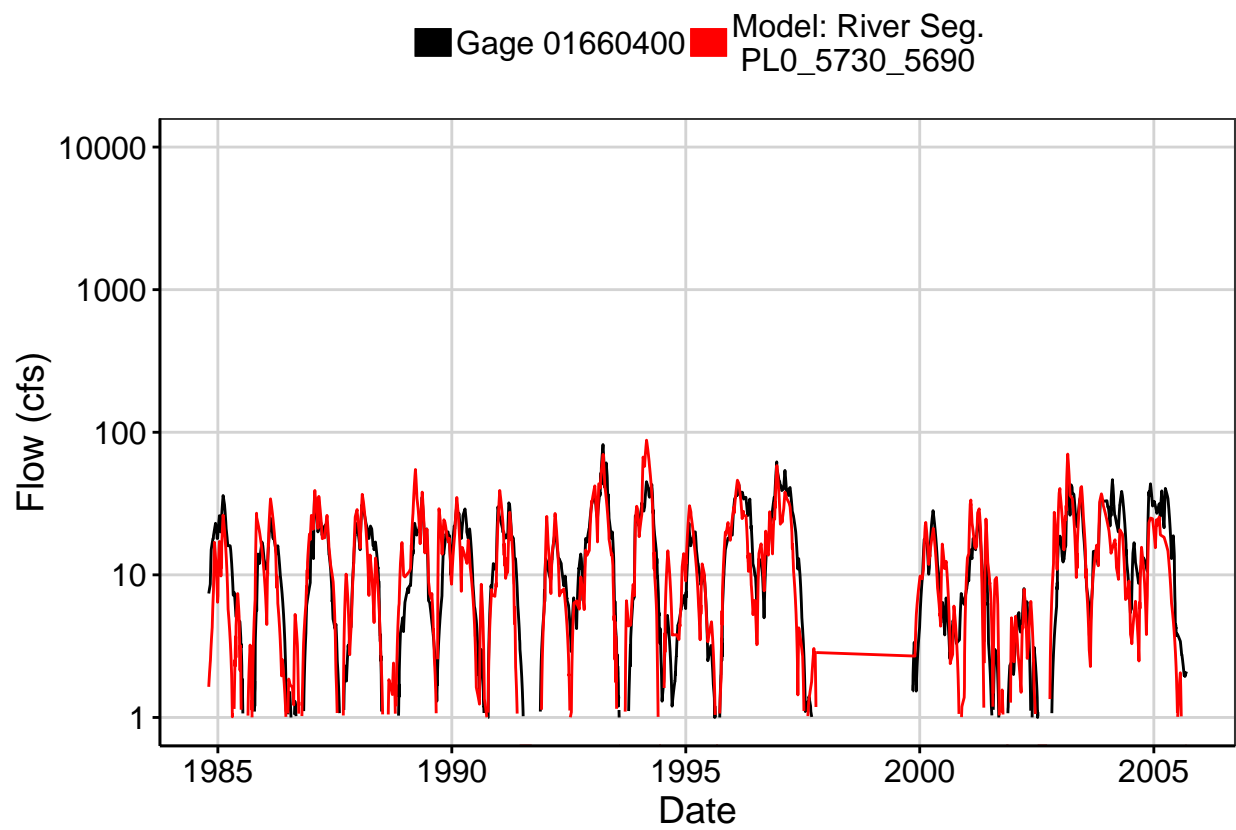


Fig. 5: Combined Baseflow

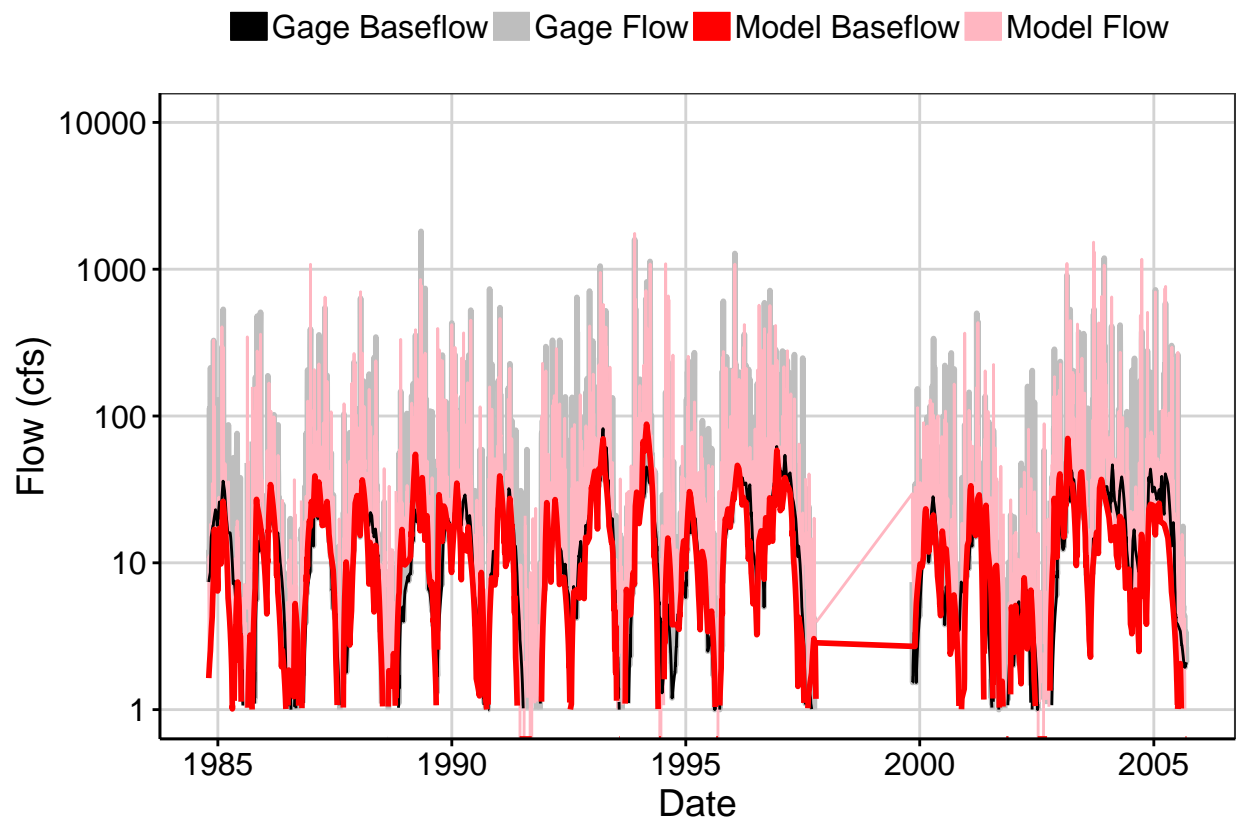


Fig. 6: Largest Error Segment

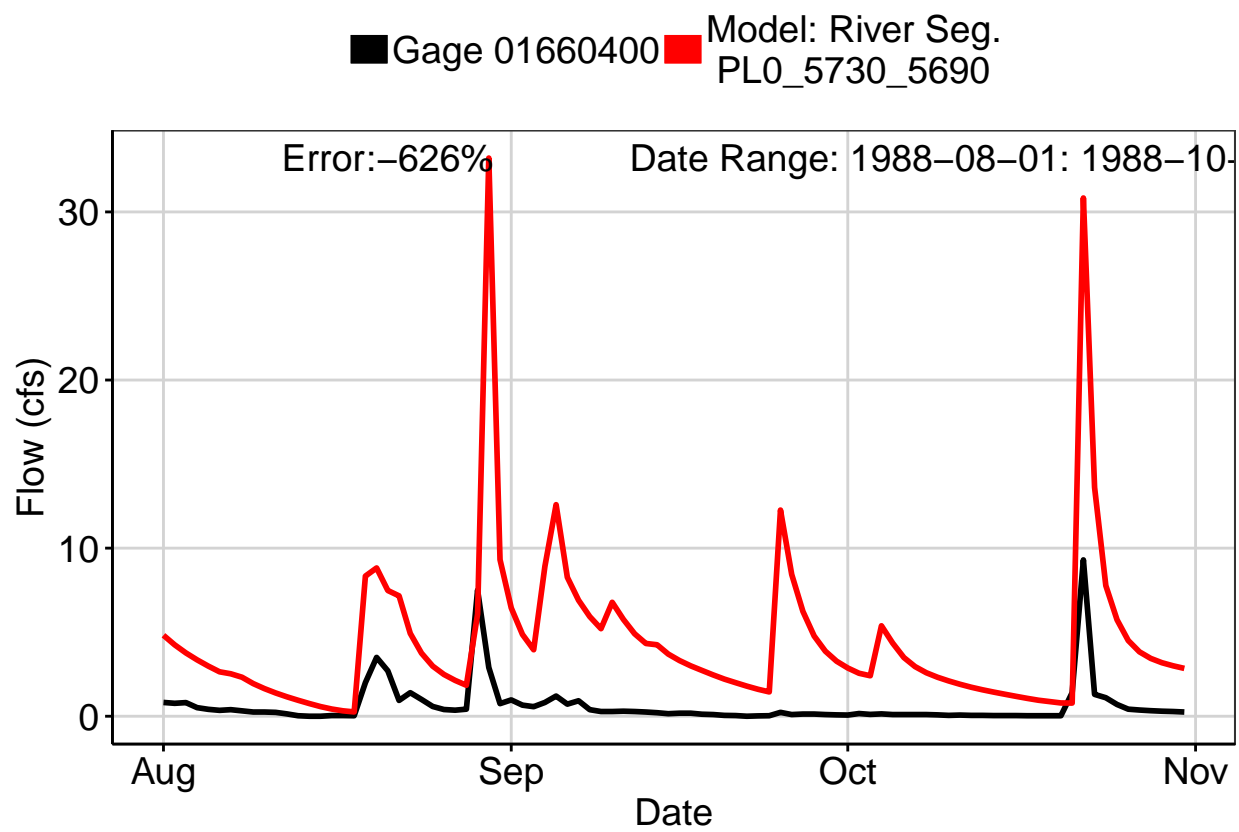


Fig. 7: Second Largest Error Segment

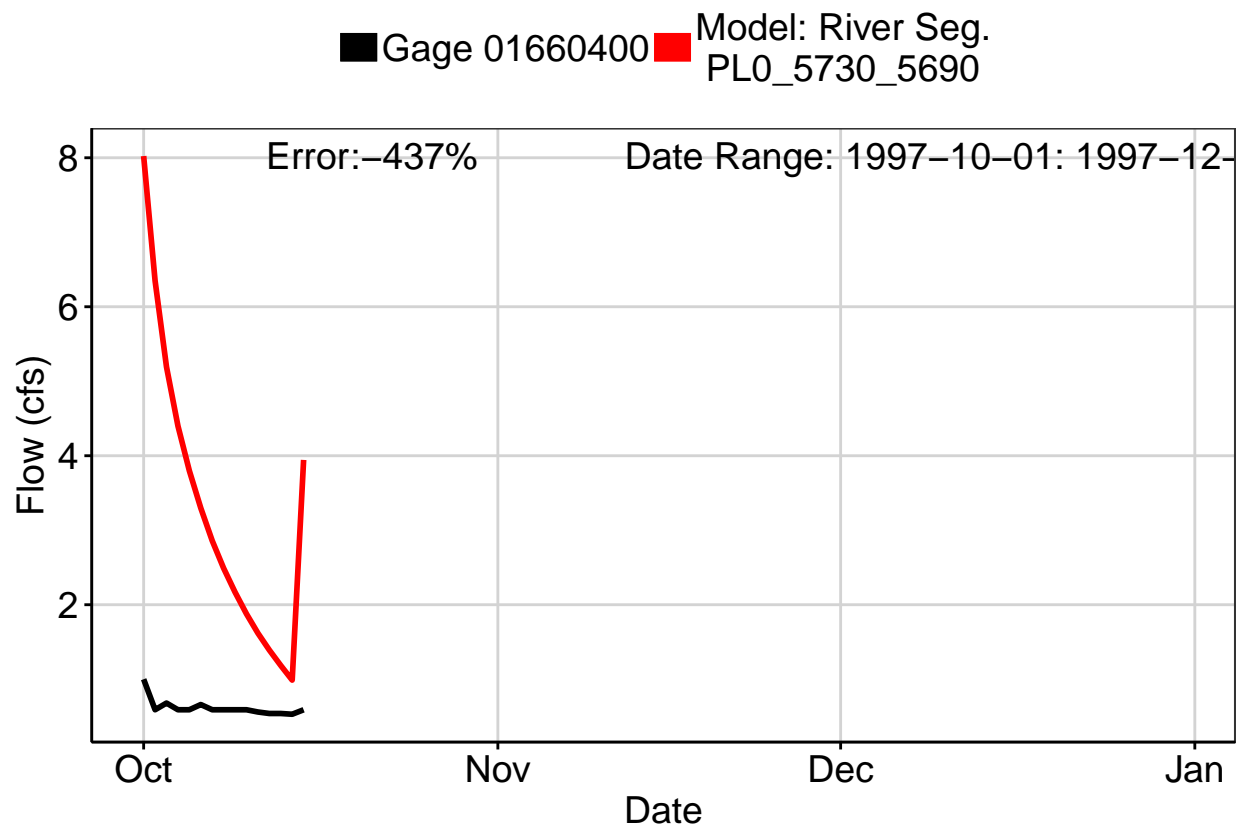


Fig. 8: Third Largest Error Segment

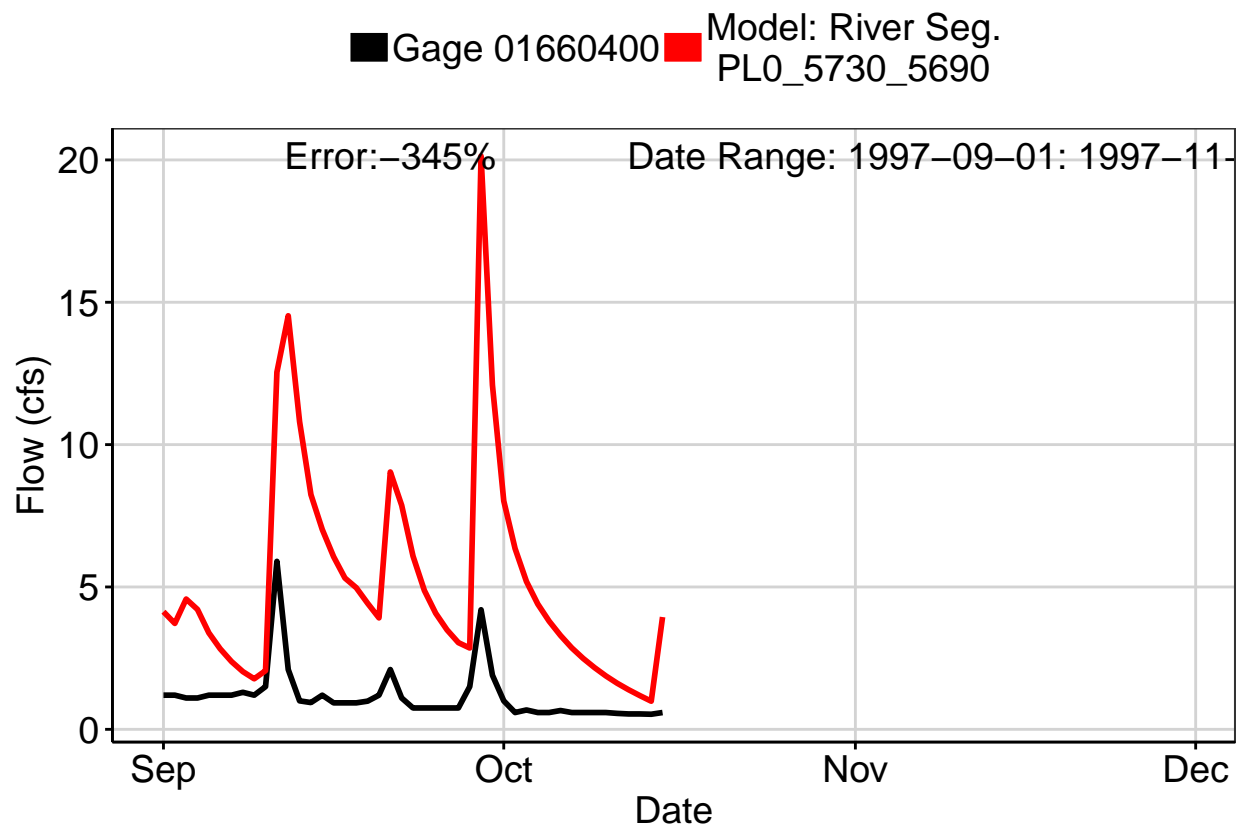


Fig. 9: Residuals Plot

