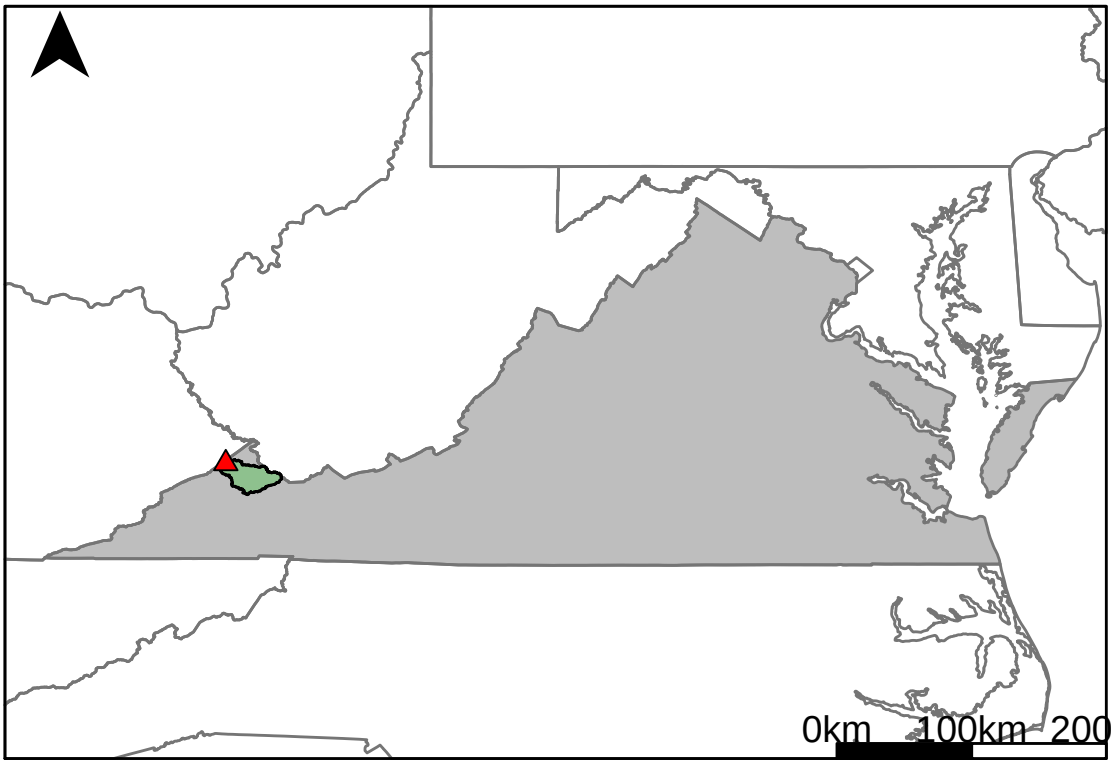
Appendix A.4: USGS Gage 03207800 vs. BS3_8350_8330



This river segment follows part of the flow of the Levisa Fork of the Big Sandy River. The gage is located in Buchanan County, VA (Lat 3721'13", Long 8211'45") approximately 40 miles northeast of Norton, VA. Drainage area is 297 sq. miles. This gage started taking data in 1967 and is still taking data. This area is not regulated and should not have any anthropogenic alterations to the flow. The average daily discharge error between the model and gage data for the 20 year timespan was -0.8%, with 56.2% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	32	54.7	-70.9
Feb. Low Flow	38	63.8	-67.9
Mar. Low Flow	88	169	-92
Apr. Low Flow	140	265	-89.3
May Low Flow	250	327	-30.8
Jun. Low Flow	264	321	-21.6
Jul. Low Flow	272	253	6.99
Aug. Low Flow	154	167	-8.44
Sep. Low Flow	90	118	-31.1
Oct. Low Flow	62.8	6.21	90.1
Nov. Low Flow	53	18.6	64.9
Dec. Low Flow	33	12	63.6

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	377	380	-0.8
Jan. Mean Flow	495	523	-5.66
Feb. Mean Flow	728	714	1.92
Mar. Mean Flow	742	664	10.5
Apr. Mean Flow	691	555	19.7
May Mean Flow	505	465	7.92
Jun. Mean Flow	295	283	4.07
Jul. Mean Flow	193	192	0.52
Aug. Mean Flow	138	172	-24.6
Sep. Mean Flow	88	136	-54.5
Oct. Mean Flow	110	185	-68.2
Nov. Mean Flow	199	271	-36.2
Dec. Mean Flow	362	423	-16.9

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	186	225	-21
Feb. High Flow	696	811	-16.5
Mar. High Flow	1160	958	17.4
Apr. High Flow	1650	1360	17.6
May High Flow	2960	1590	46.3
Jun. High Flow	2010	1710	14.9
Jul. High Flow	1270	1130	11
Aug. High Flow	1700	1270	25.3
Sep. High Flow	507	583	-15
Oct. High Flow	588	422	28.2
Nov. High Flow	385	222	42.3
Dec. High Flow	207	230	-11.1

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	14	0	100
Med. 1 Day Min	25.2	1.62	93.6
Min. 3 Day Min	14.3	0	100
Med. 3 Day Min	26.7	1.92	92.8
Min. 7 Day Min	15.6	0	100
Med. 7 Day Min	28.3	3.23	88.6
Min. 30 Day Min	22.1	2.16	90.2
Med. 30 Day Min	39.3	27.7	29.5
Min. 90 Day Min	36.1	8.26	77.1
Med. 90 Day Min	99.6	90	9.64
7Q10	20.2	0	100
Year of 90-Day Min. Flow	1988	1988	0
Drought Year Mean	121	380	-214
Mean Baseflow	175	201	-14.9

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	11200	11800	-5.36
Med. 1 Day Max	4510	5350	-18.6
Max. 3 Day Max	5880	6980	-18.7
Med. 3 Day Max	3110	3340	-7.4
Max. 7 Day Max	3520	4880	-38.6
Med. 7 Day Max	2040	2160	-5.88
Max. 30 Day Max	2370	2330	1.69
Med. 30 Day Max	1120	986	12
Max. 90 Day Max	1360	1490	-9.56
Med. 90 Day Max	778	716	7.97

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	23	0.7	96.9
5% Non-Exceedance	32	7.71	75.9
50% Non-Exceedance	188	245	-30.3
95% Non-Exceedance	1250	1120	10.4
99% Non-Exceedance	2820	2850	-1.06
Sept. 10% Non-Exceedance	2.43	2.36	2.88

Fig. 1: Hydrograph

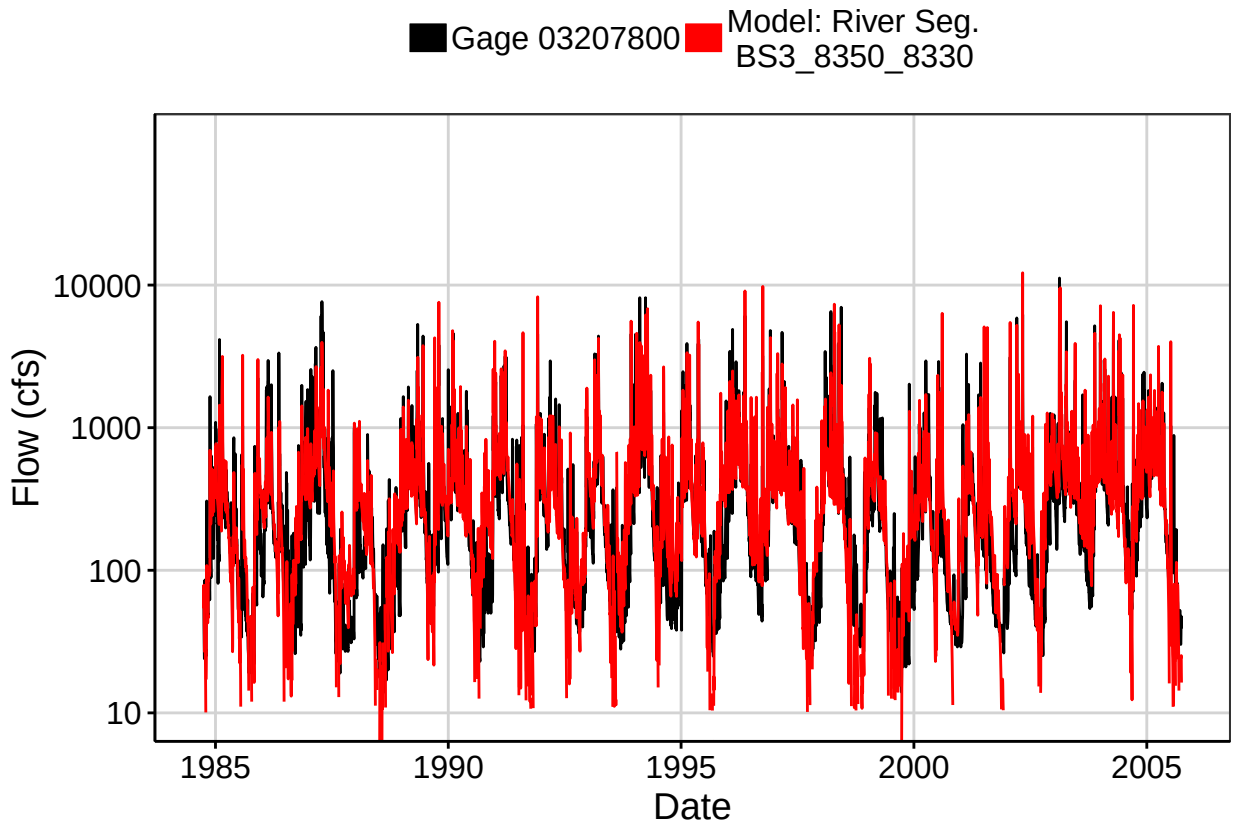


Fig. 2: Zoomed Hydrograph

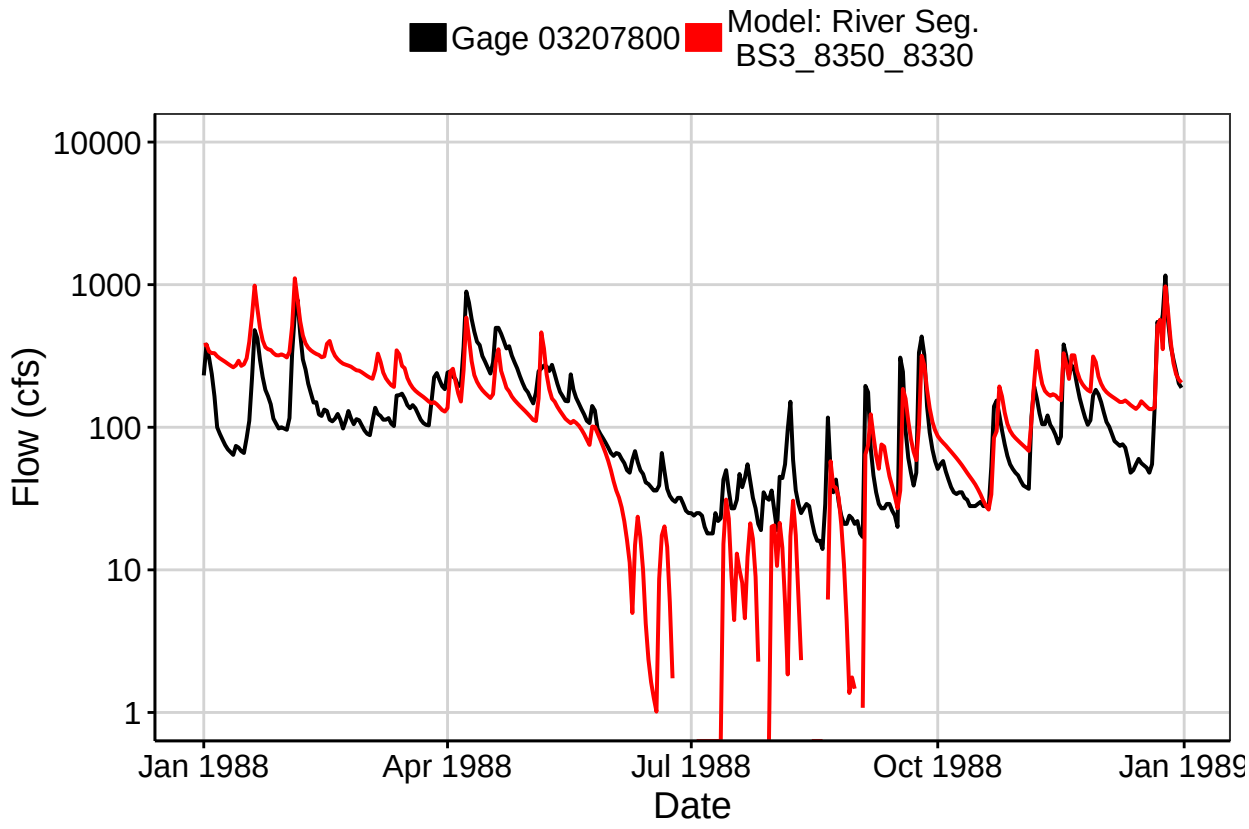


Fig. 3: Flow Exceedance

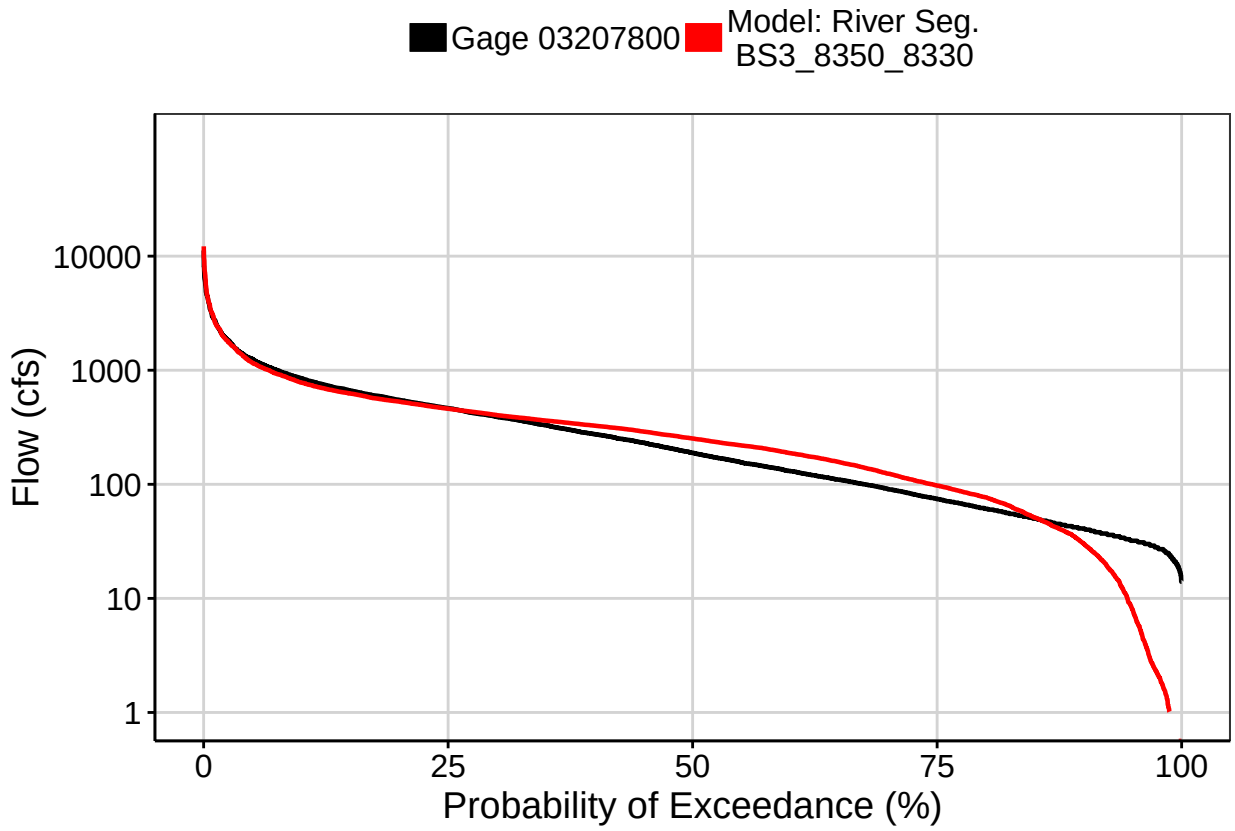


Fig. 4: Baseflow

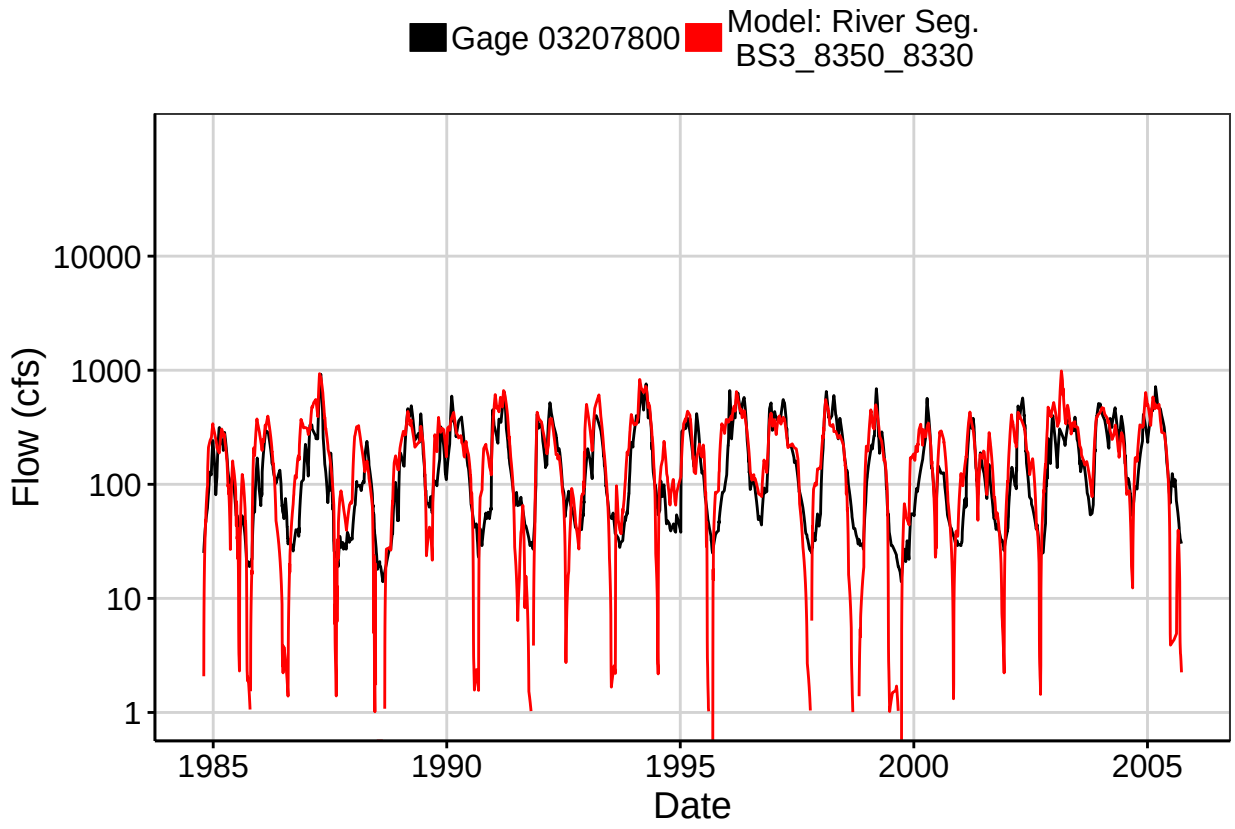


Fig. 5: Combined Baseflow

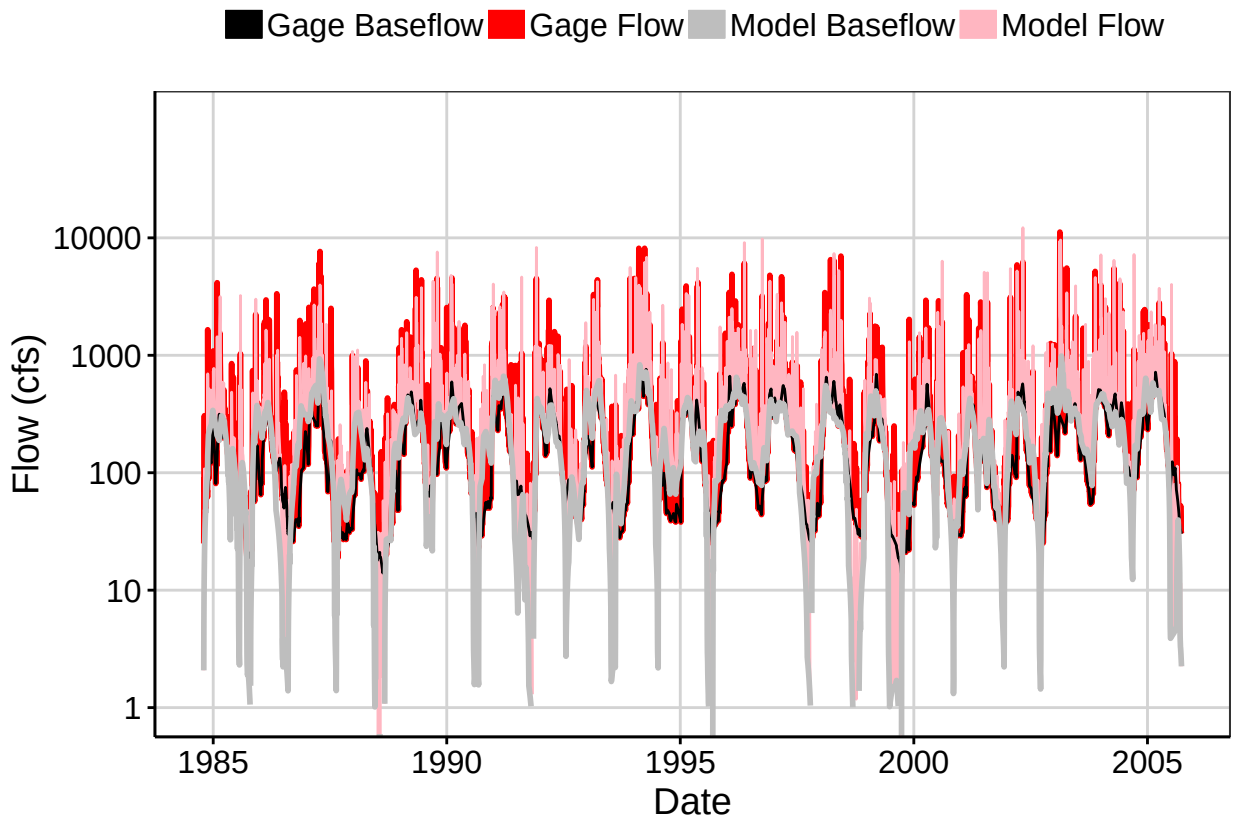


Fig. 6: Largest Error Segment

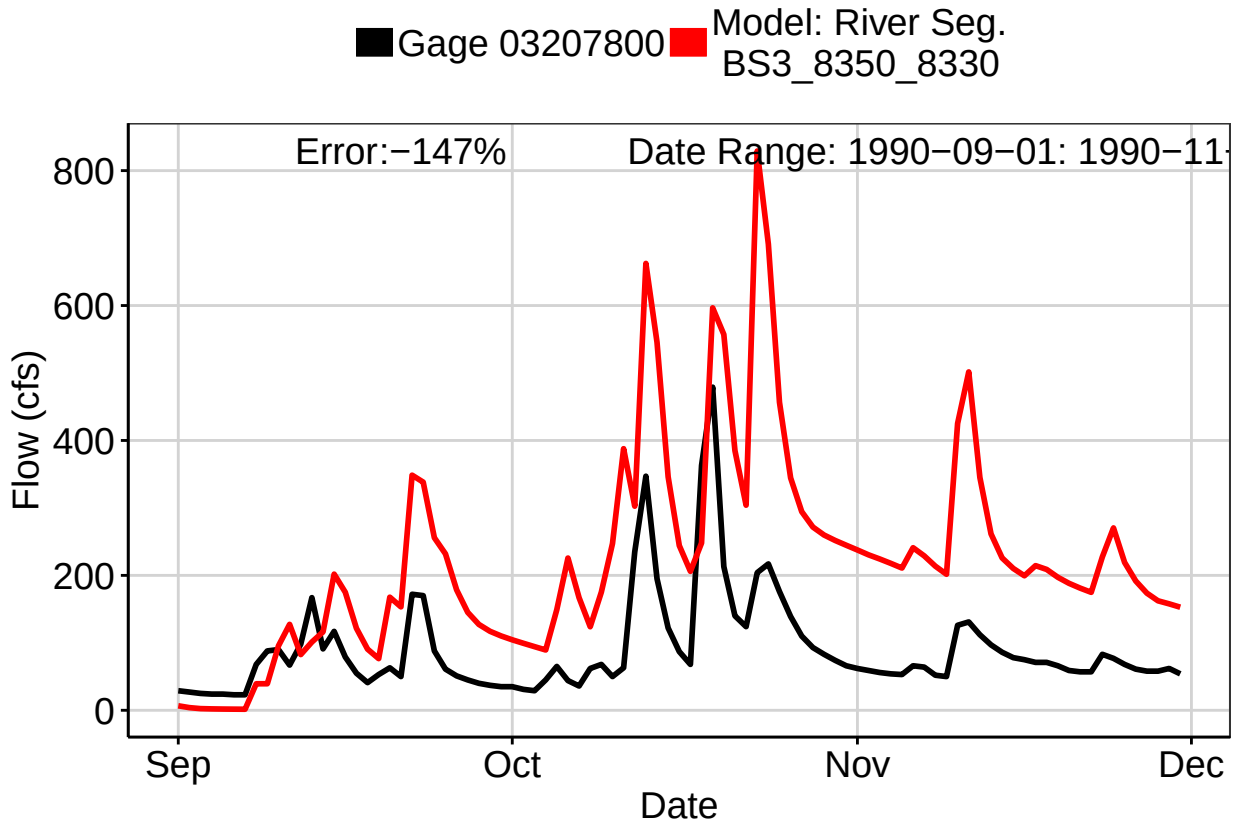


Fig. 7: Second Largest Error Segment

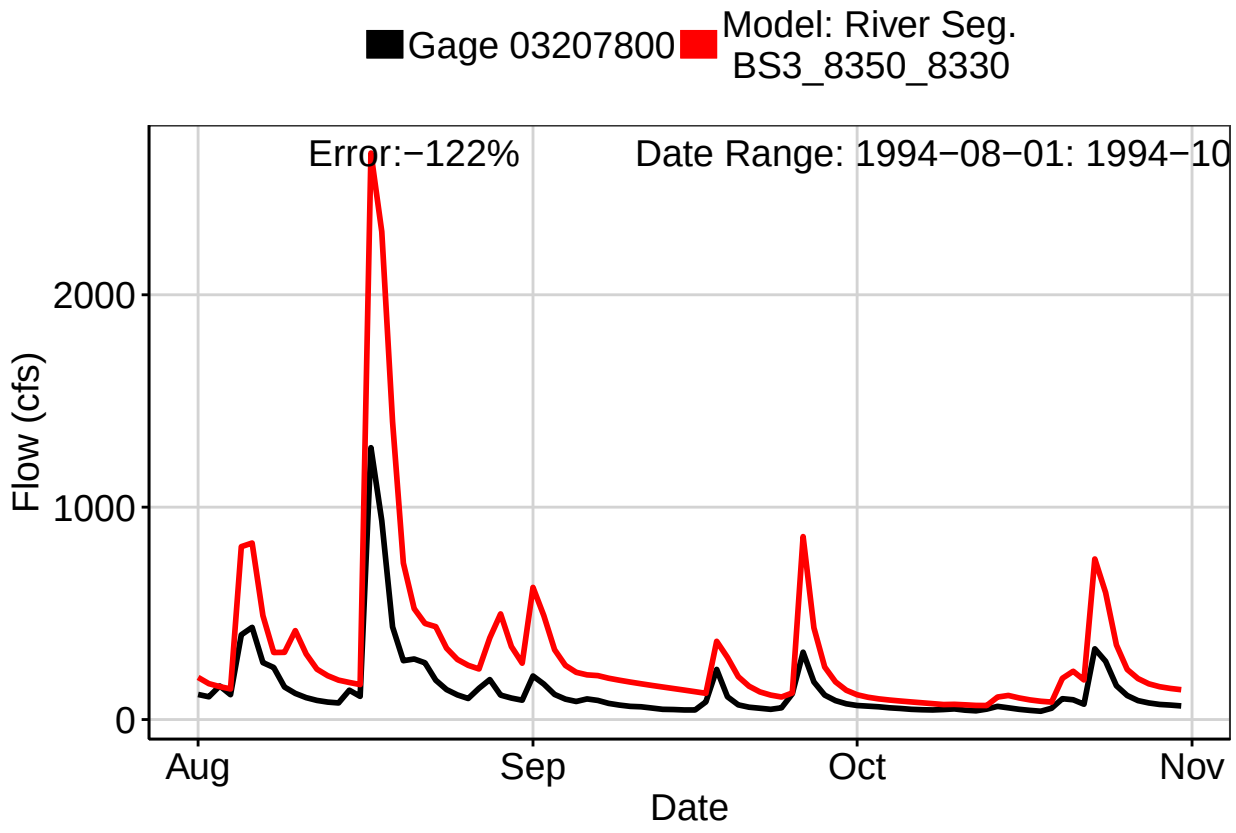


Fig. 8: Third Largest Error Segment

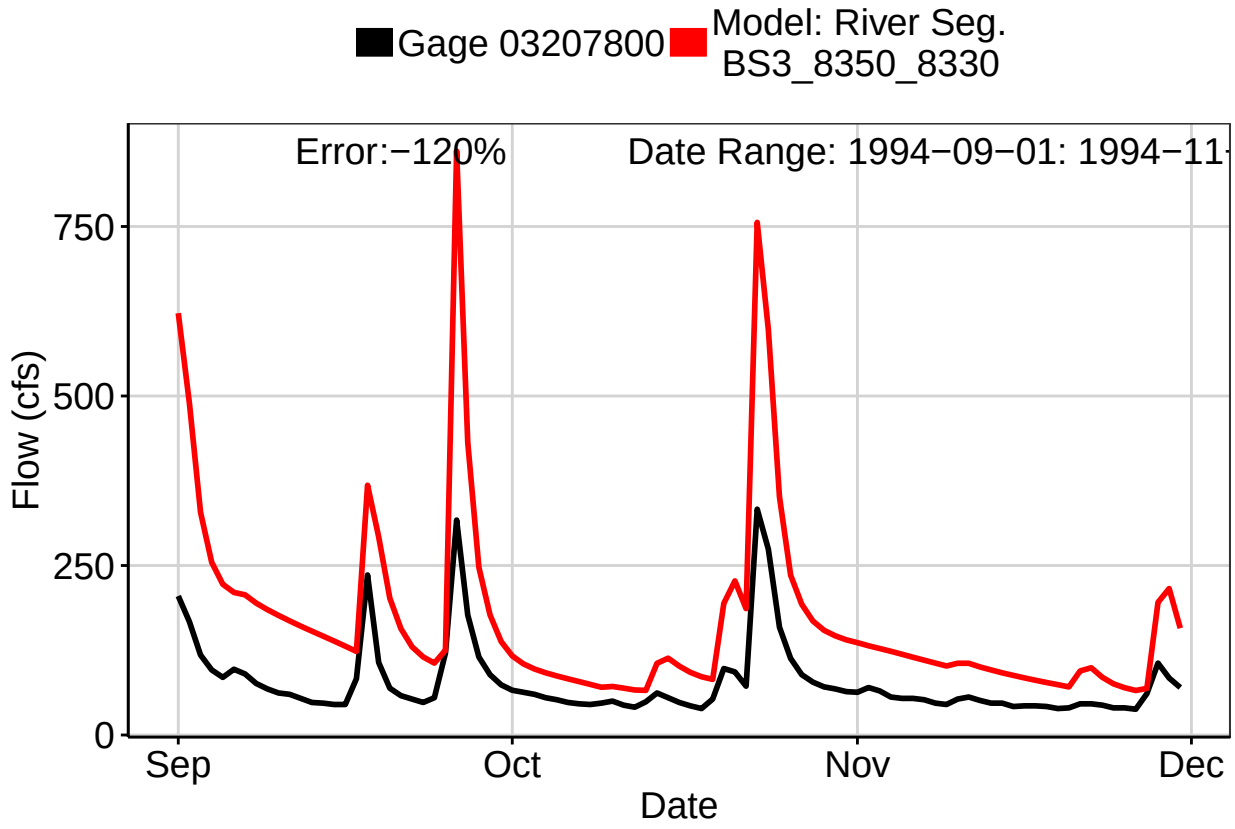


Fig. 9: Residuals Plot