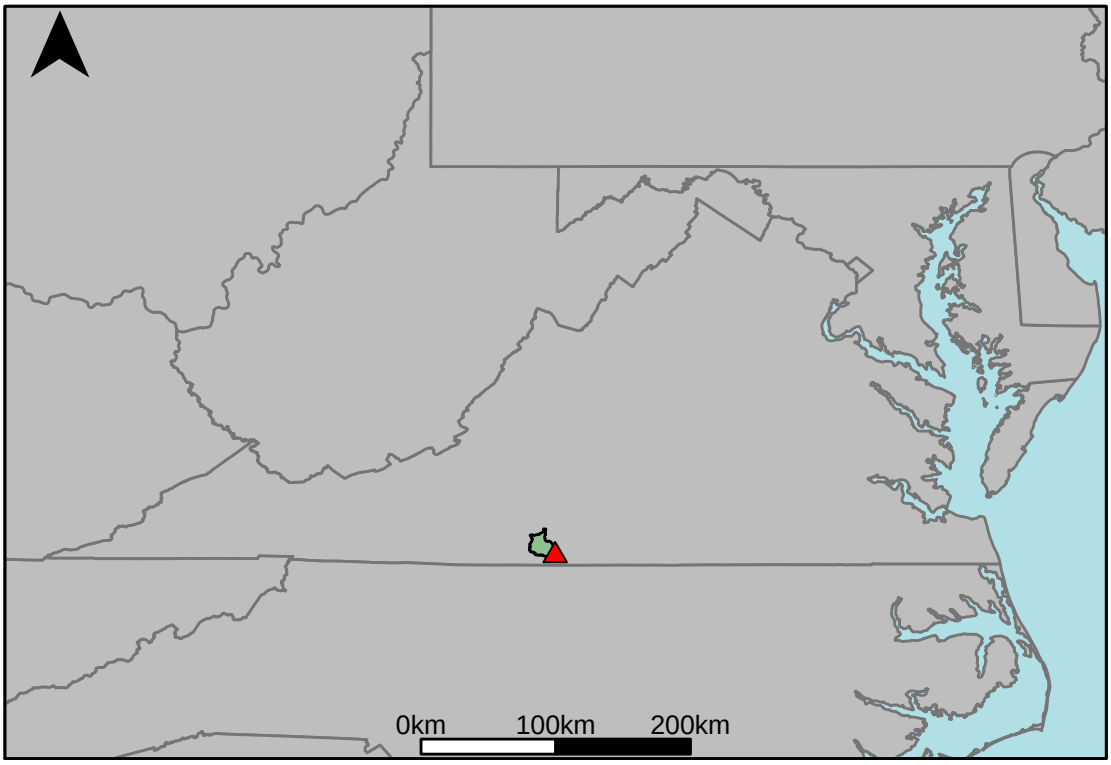
Appendix C.8: USGS Gage 02074500 vs. OD2_8670_8890



This river segment follows part of the flow of the Sandy River, a tributary of the Dan River. The gage is located in Pittsylvania County, VA (Lat 3637'10", Long 7930'16") approximately 6 miles northwest of Danville, VA. Drainage area is 111 sq. miles. This gage started taking data in 1929 and is still taking data. There is s diurnal fluctuation at low flow caused by Stony Mill, a small mill upstream. The average daily discharge error between the model and gage data for the 20 year timespan was 4.24%, with 54.6% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	42	16.2	-61.4
Feb. Low Flow	50	24.8	-50.4
Mar. Low Flow	55	36.4	-33.8
Apr. Low Flow	59	59.1	0.17
May Low Flow	72	96.6	34.2
Jun. Low Flow	88	98.2	11.6
Jul. Low Flow	76.3	67.6	-11.4
Aug. Low Flow	64.6	47.2	-26.9
Sep. Low Flow	52	34	-34.6
Oct. Low Flow	39	22.2	-43.1
Nov. Low Flow	36	19.3	-46.4
Dec. Low Flow	36	14.5	-59.7

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	118	113	-4.24
Jan. Mean Flow	149	143	-4.03
Feb. Mean Flow	146	177	21.2
Mar. Mean Flow	193	231	19.7
Apr. Mean Flow	156	169	8.33
May Mean Flow	116	110	-5.17
Jun. Mean Flow	103	93.3	-9.42
Jul. Mean Flow	79.1	48.8	-38.3
Aug. Mean Flow	86.1	50.9	-40.9
Sep. Mean Flow	114	94.1	-17.5
Oct. Mean Flow	83.9	71.7	-14.5
Nov. Mean Flow	90.1	77.8	-13.7
Dec. Mean Flow	107	97.9	-8.5

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	112	67.4	-39.8
Feb. High Flow	200	281	40.5
Mar. High Flow	255	297	16.5
Apr. High Flow	533	440	-17.4
May High Flow	518	376	-27.4
Jun. High Flow	630	1020	61.9
Jul. High Flow	280	306	9.29
Aug. High Flow	236	183	-22.5
Sep. High Flow	165	169	2.42
Oct. High Flow	192	89.7	-53.3
Nov. High Flow	156	58.6	-62.4
Dec. High Flow	134	63.3	-52.8

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	6.4	2.86	-55.3
Med. 1 Day Min	33	9.38	-71.6
Min. 3 Day Min	6.56	2.92	-55.5
Med. 3 Day Min	33.3	9.74	-70.8
Min. 7 Day Min	7.82	3.08	-60.6
Med. 7 Day Min	34.1	10.4	-69.5
Min. 30 Day Min	10.6	3.71	-65
Med. 30 Day Min	41.7	15.2	-63.5
Min. 90 Day Min	16.6	8.16	-50.8
Med. 90 Day Min	59	26.9	-54.4
7Q10	14.6	4.59	-68.6
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	44.8	24.2	-46
Mean Baseflow	64.5	60	-6.98

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	8340	8310	-0.36
Med. 1 Day Max	2660	2210	-16.9
Max. 3 Day Max	4770	5110	7.13
Med. 3 Day Max	1380	1160	-15.9
Max. 7 Day Max	2780	2600	-6.47
Med. 7 Day Max	662	604	-8.76
Max. 30 Day Max	836	789	-5.62
Med. 30 Day Max	282	312	10.6
Max. 90 Day Max	364	441	21.2
Med. 90 Day Max	188	209	11.2

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	17	4.93	-71
5% Non-Exceedance	29	10.7	-63.1
50% Non-Exceedance	73.8	60.8	-17.6
95% Non-Exceedance	274	312	13.9
99% Non-Exceedance	974	1050	7.8
Sept. 10% Non-Exceedance	10.2	28	175

Fig. 1: Hydrograph

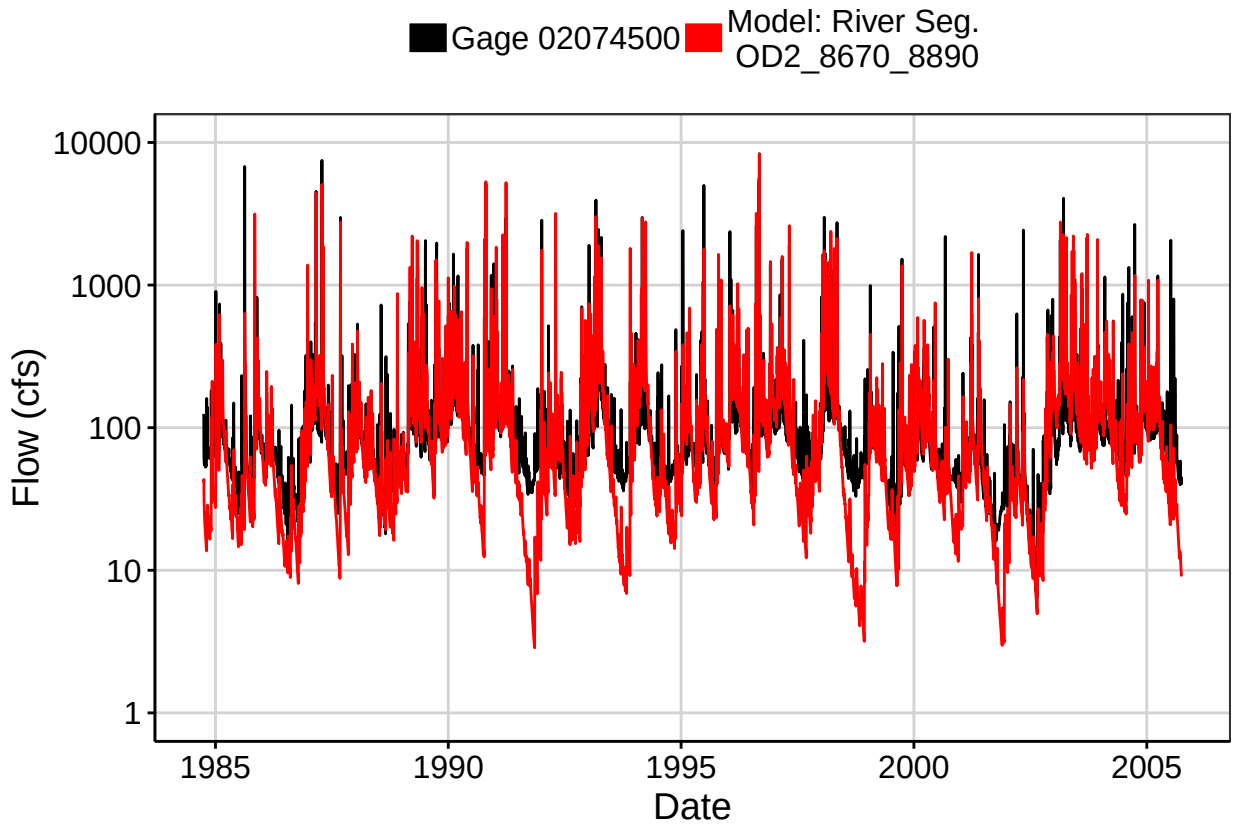


Fig. 2: Zoomed Hydrograph

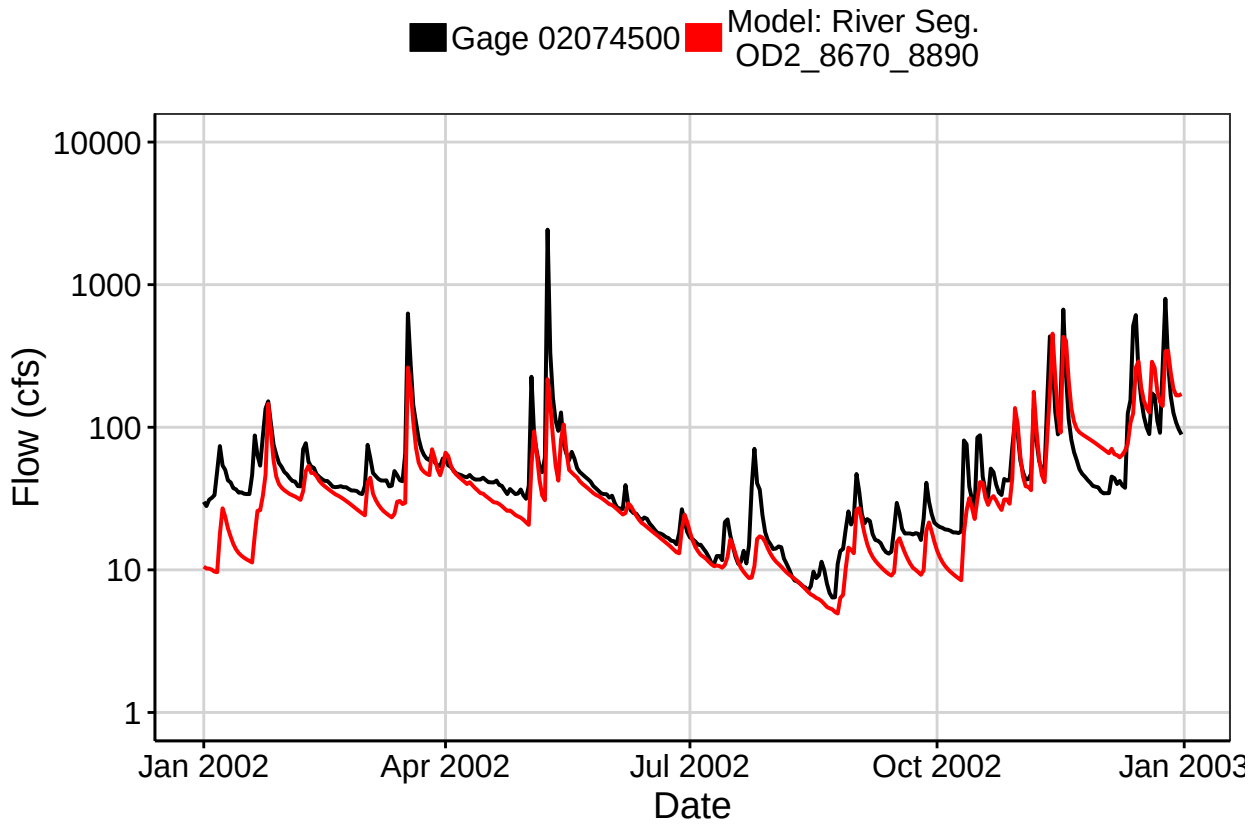


Fig. 3: Flow Exceedance

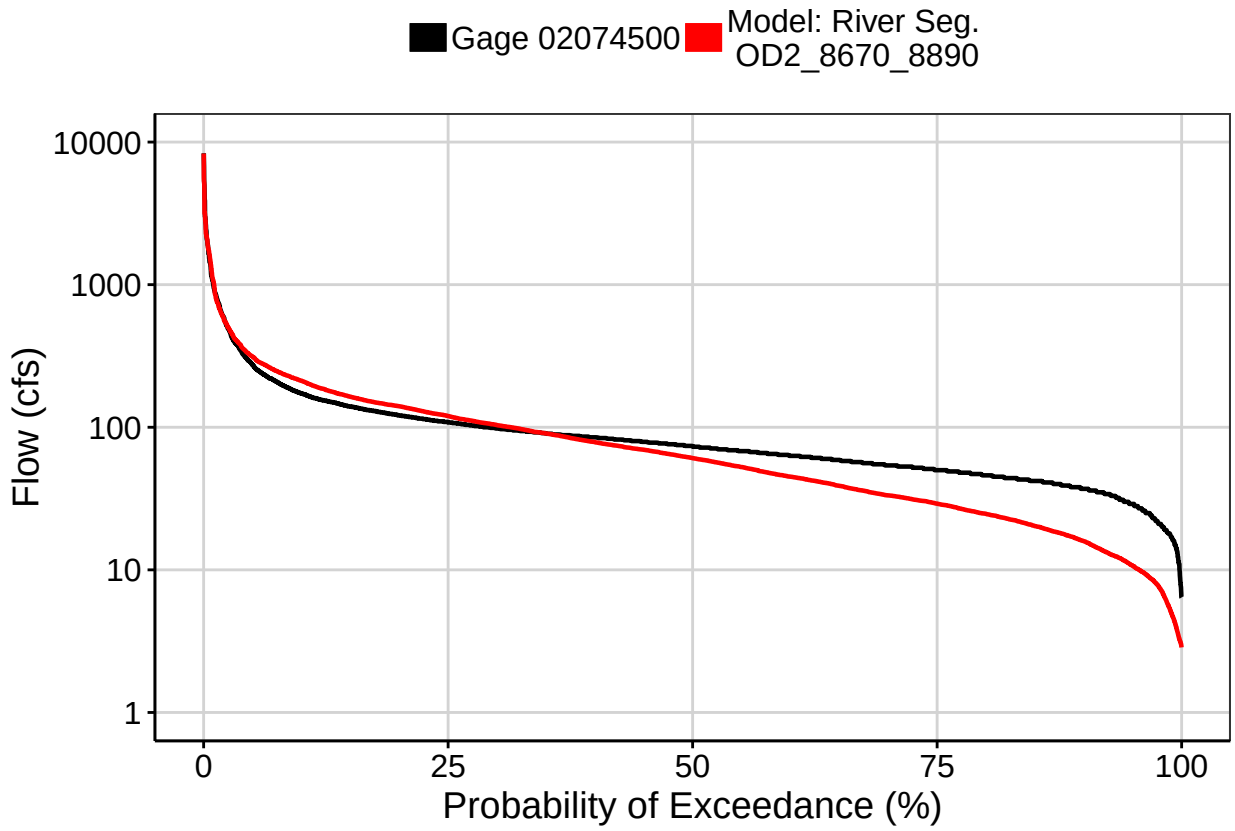


Fig. 4: Baseflow

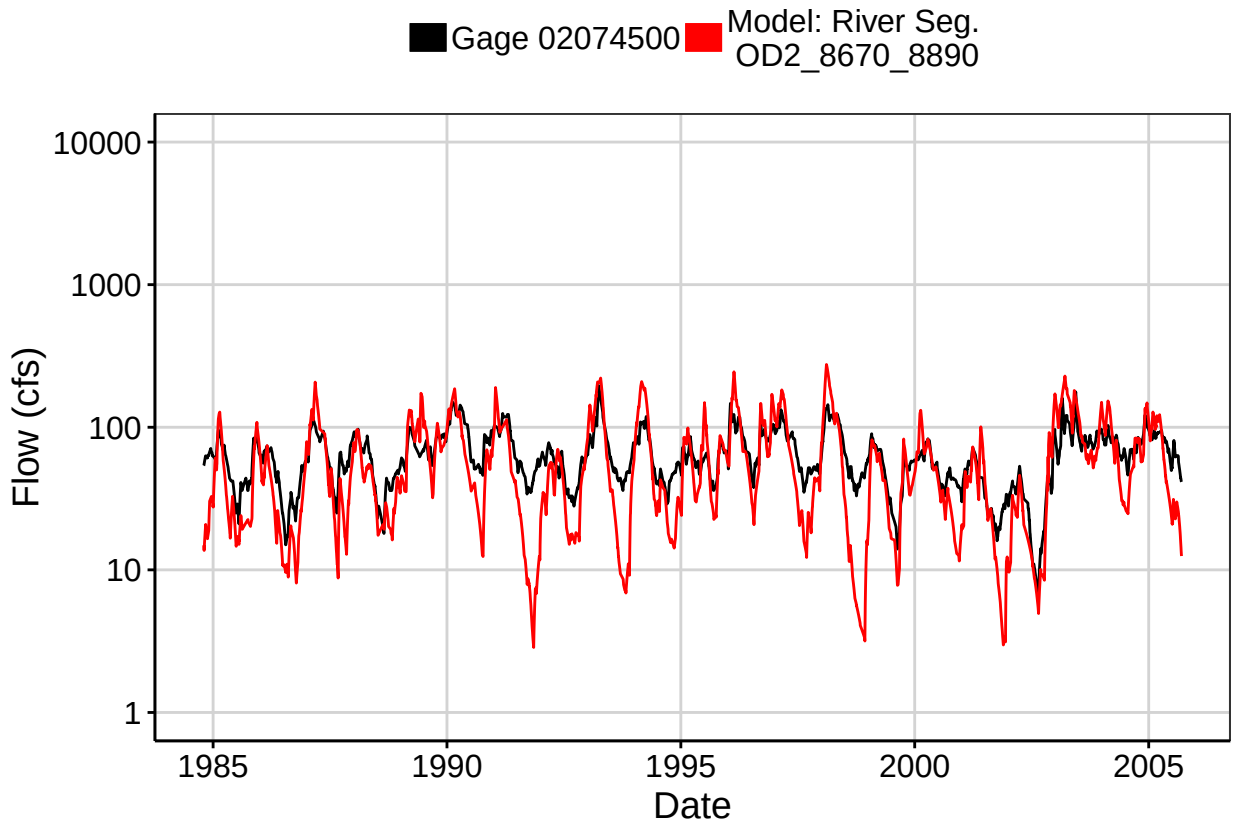


Fig. 5: Combined Baseflow

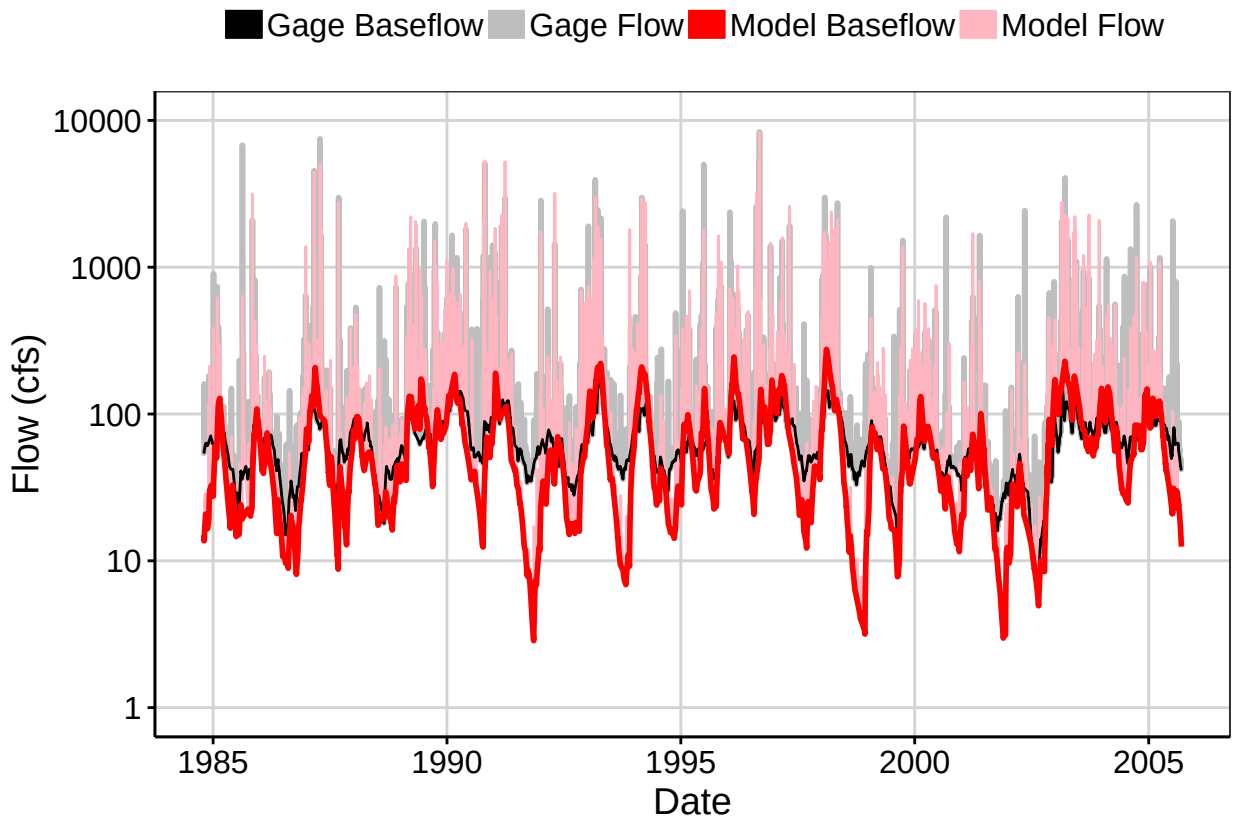


Fig. 6: Largest Error Segment

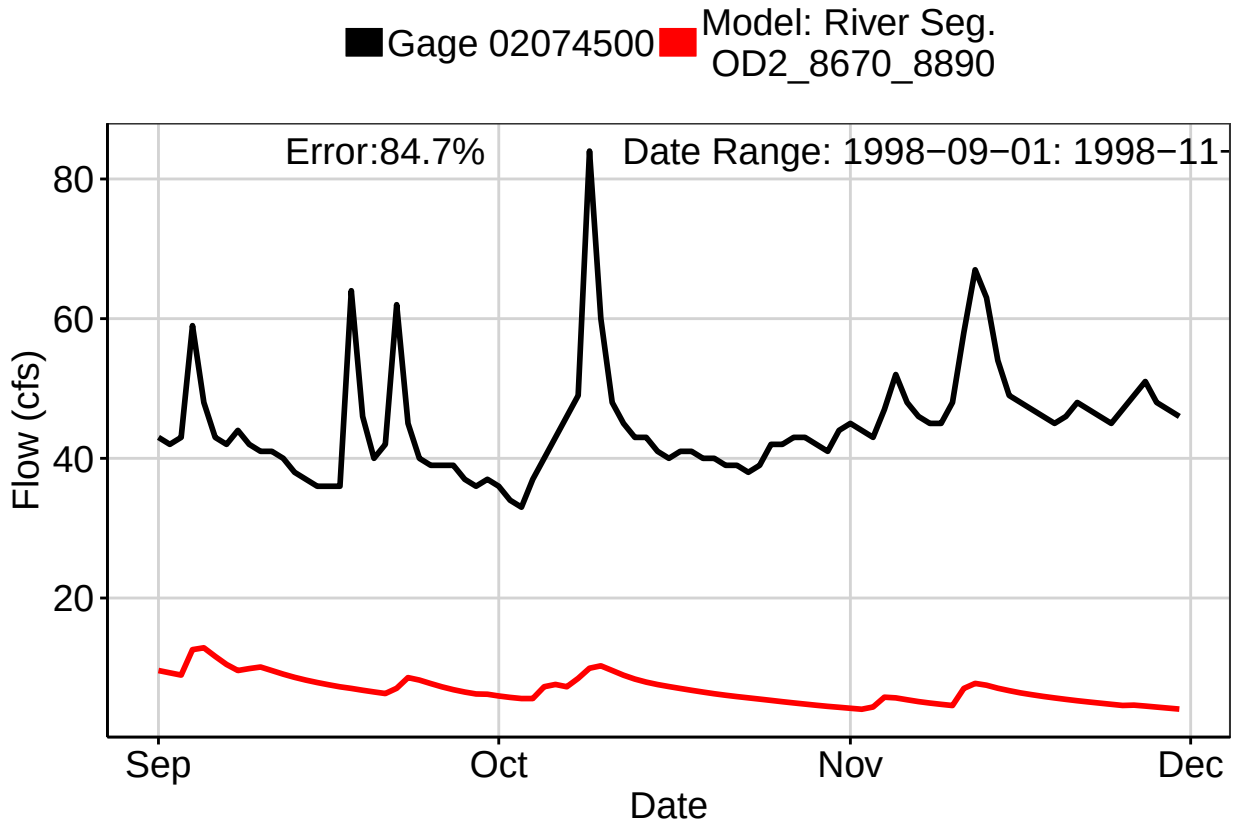


Fig. 7: Second Largest Error Segment

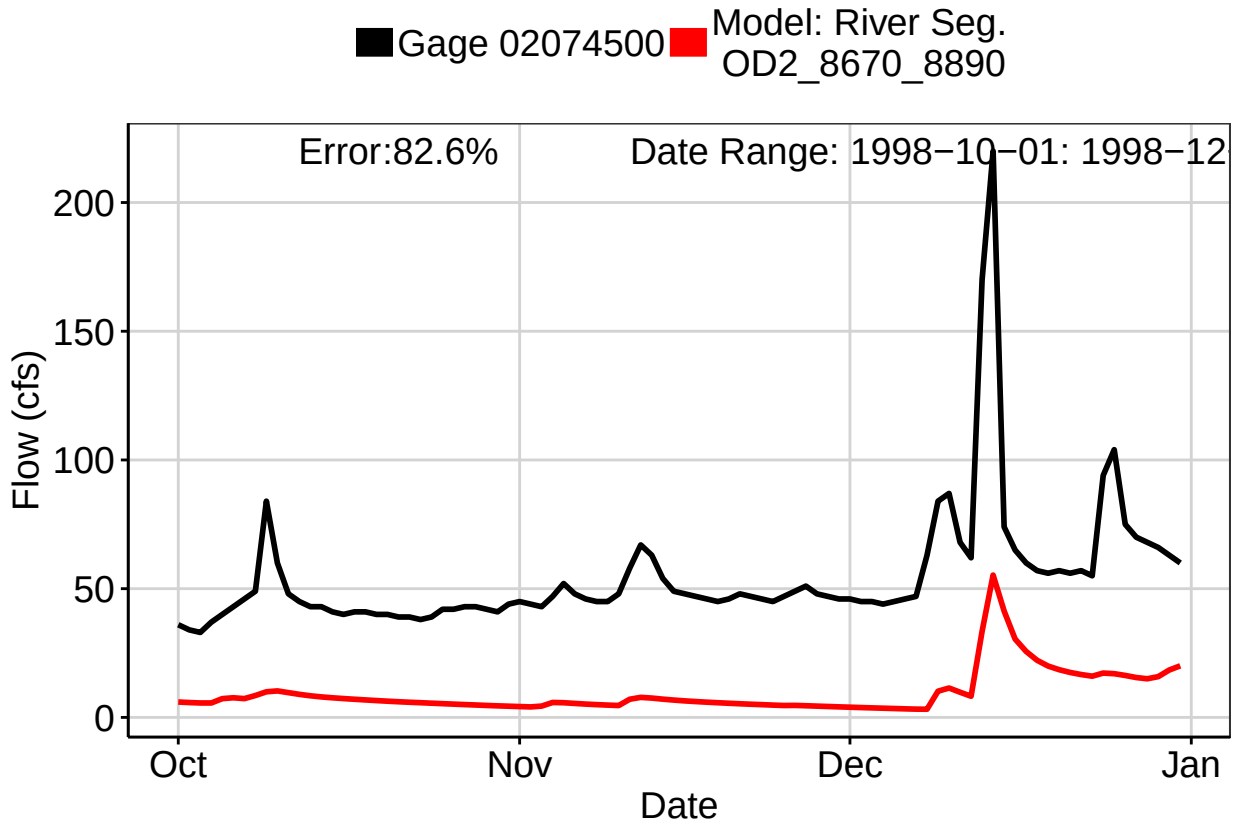


Fig. 8: Third Largest Error Segment

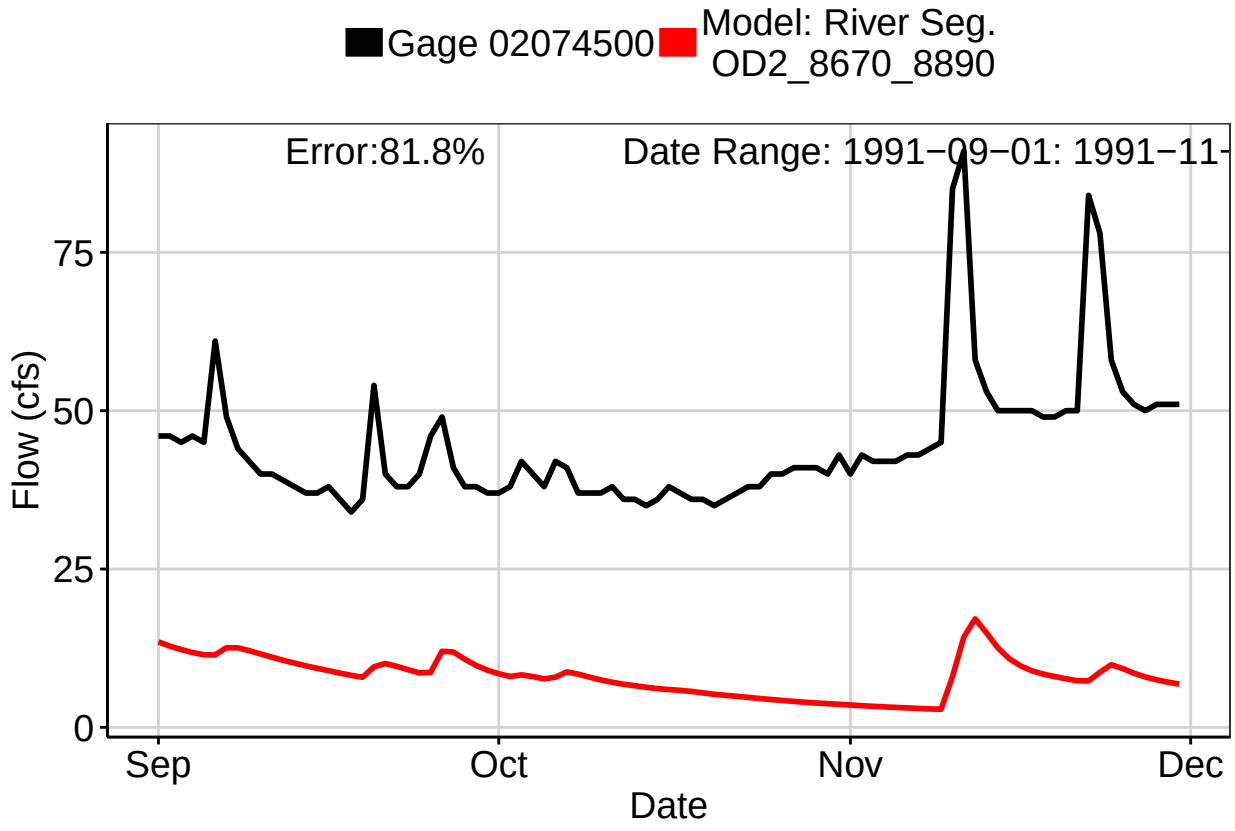


Fig. 9: Residuals Plot