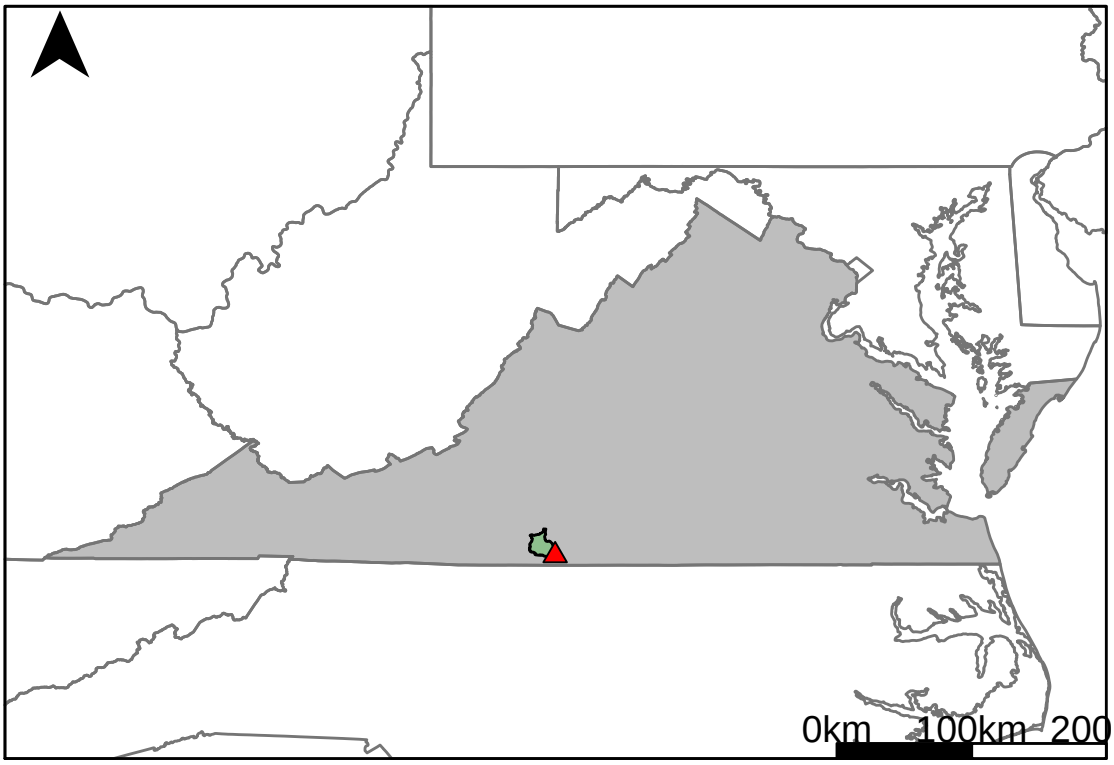
Appendix C.8: USGS Gage 02074500 vs. OD2_8670_8890



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 3.39%, 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	16.4	61
Feb. Low Flow	50	25	50
Mar. Low Flow	55	36.8	33.1
Apr. Low Flow	59	59.6	-1.02
May Low Flow	72	97.5	-35.4
Jun. Low Flow	88	99.2	-12.7
Jul. Low Flow	76.3	68.2	10.6
Aug. Low Flow	64.6	47.7	26.2
Sep. Low Flow	52	34.4	33.8
Oct. Low Flow	39	22.4	42.6
Nov. Low Flow	36	19.4	46.1
Dec. Low Flow	36	14.6	59.4

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	118	114	3.39
Jan. Mean Flow	149	144	3.36
Feb. Mean Flow	146	178	-21.9
Mar. Mean Flow	193	234	-21.2
Apr. Mean Flow	156	170	-8.97
May Mean Flow	116	111	4.31
Jun. Mean Flow	103	94.2	8.54
Jul. Mean Flow	79.1	49.3	37.7
Aug. Mean Flow	86.1	51.4	40.3
Sep. Mean Flow	114	95	16.7
Oct. Mean Flow	83.9	72.4	13.7
Nov. Mean Flow	90.1	78.6	12.8
Dec. Mean Flow	107	98.8	7.66

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	112	68.1	39.2
Feb. High Flow	200	283	-41.5
Mar. High Flow	255	300	-17.6
Apr. High Flow	533	444	16.7
May High Flow	518	380	26.6
Jun. High Flow	630	1030	-63.5
Jul. High Flow	280	309	-10.4
Aug. High Flow	236	184	22
Sep. High Flow	165	171	-3.64
Oct. High Flow	192	90.5	52.9
Nov. High Flow	156	59.2	62.1
Dec. High Flow	134	63.9	52.3

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	6.4	2.88	55
Med. 1 Day Min	33	9.47	71.3
Min. 3 Day Min	6.56	2.95	55
Med. 3 Day Min	33.3	9.83	70.5
Min. 7 Day Min	7.82	3.1	60.4
Med. 7 Day Min	34.1	10.5	69.2
Min. 30 Day Min	10.6	3.75	64.6
Med. 30 Day Min	41.7	15.3	63.3
Min. 90 Day Min	16.6	8.24	50.4
Med. 90 Day Min	59	27.1	54.1
7Q10	14.6	4.63	68.3
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	44.8	114	-154
Mean Baseflow	64.5	60.6	6.05

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	8340	8390	-0.6
Med. 1 Day Max	2660	2230	16.2
Max. 3 Day Max	4770	5160	-8.18
Med. 3 Day Max	1380	1170	15.2
Max. 7 Day Max	2780	2630	5.4
Med. 7 Day Max	662	610	7.85
Max. 30 Day Max	836	797	4.67
Med. 30 Day Max	282	315	-11.7
Max. 90 Day Max	364	445	-22.3
Med. 90 Day Max	188	211	-12.2

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	17	4.98	70.7
5% Non-Exceedance	29	10.8	62.8
50% Non-Exceedance	73.8	61.3	16.9
95% Non-Exceedance	274	315	-15
99% Non-Exceedance	974	1060	-8.83
Sept. 10% Non-Exceedance	10.2	10.3	-0.98

Fig. 1: Hydrograph

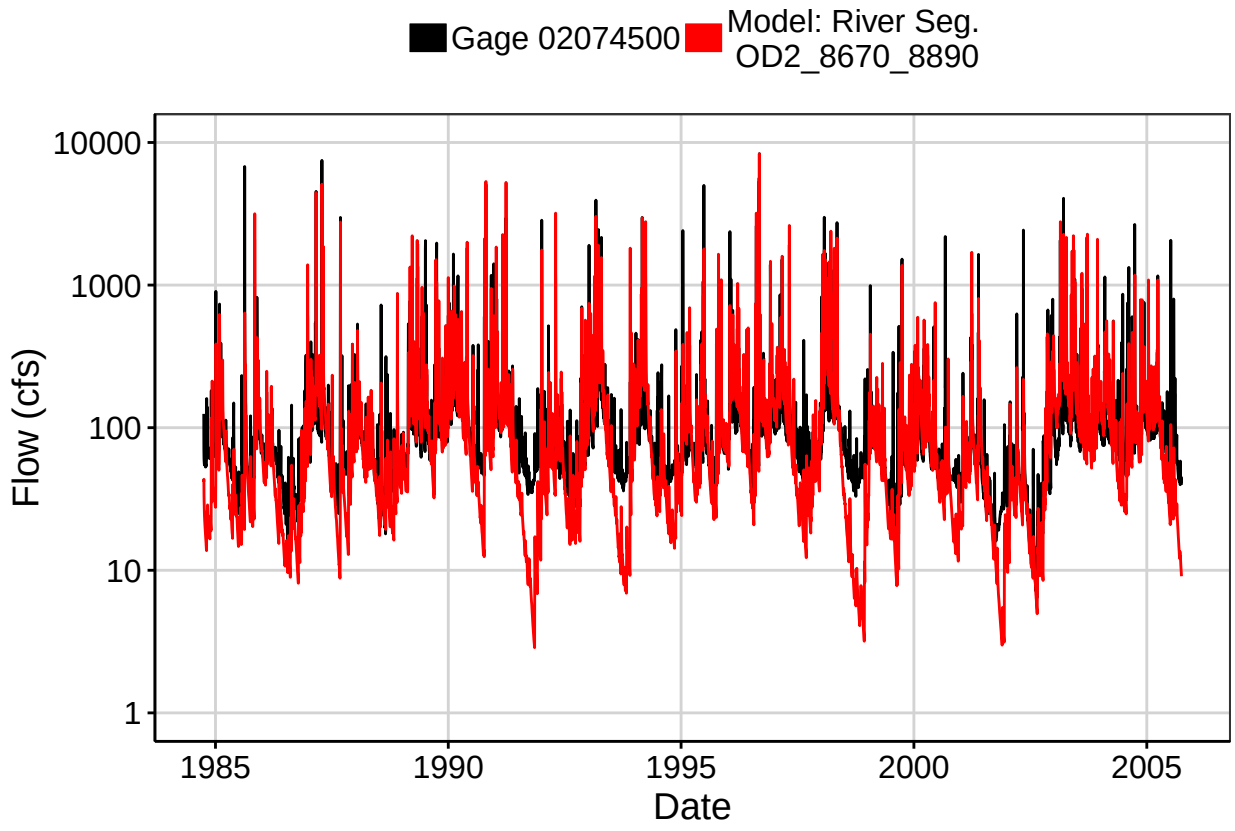


Fig. 2: Zoomed Hydrograph

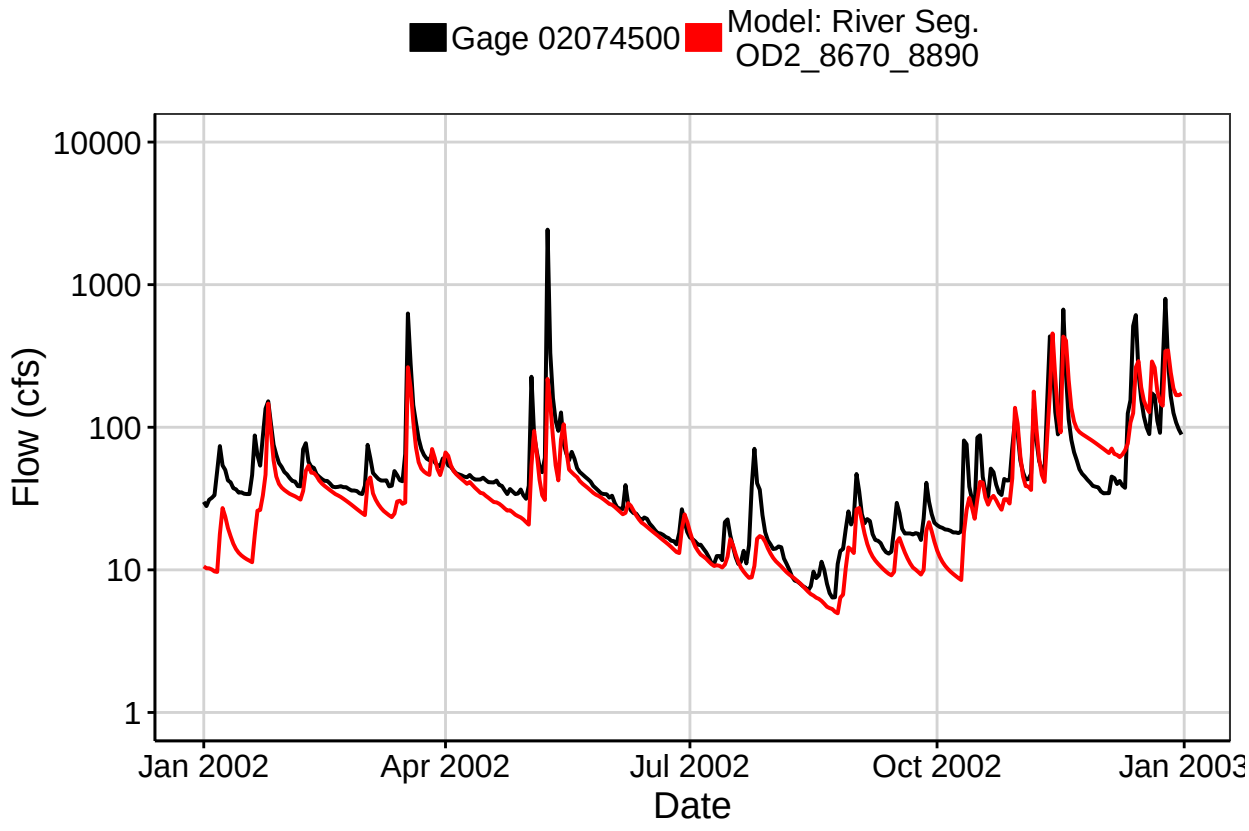


Fig. 3: Flow Exceedance

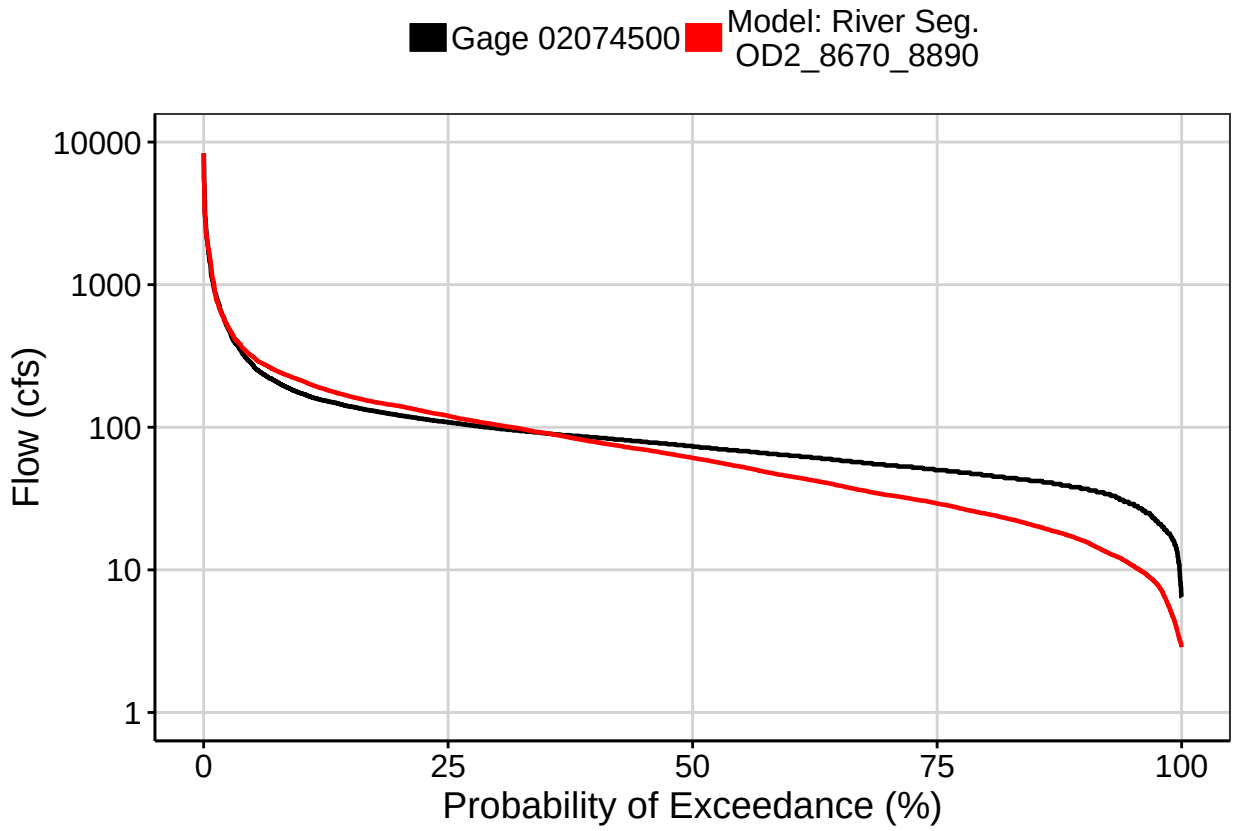


Fig. 4: Baseflow

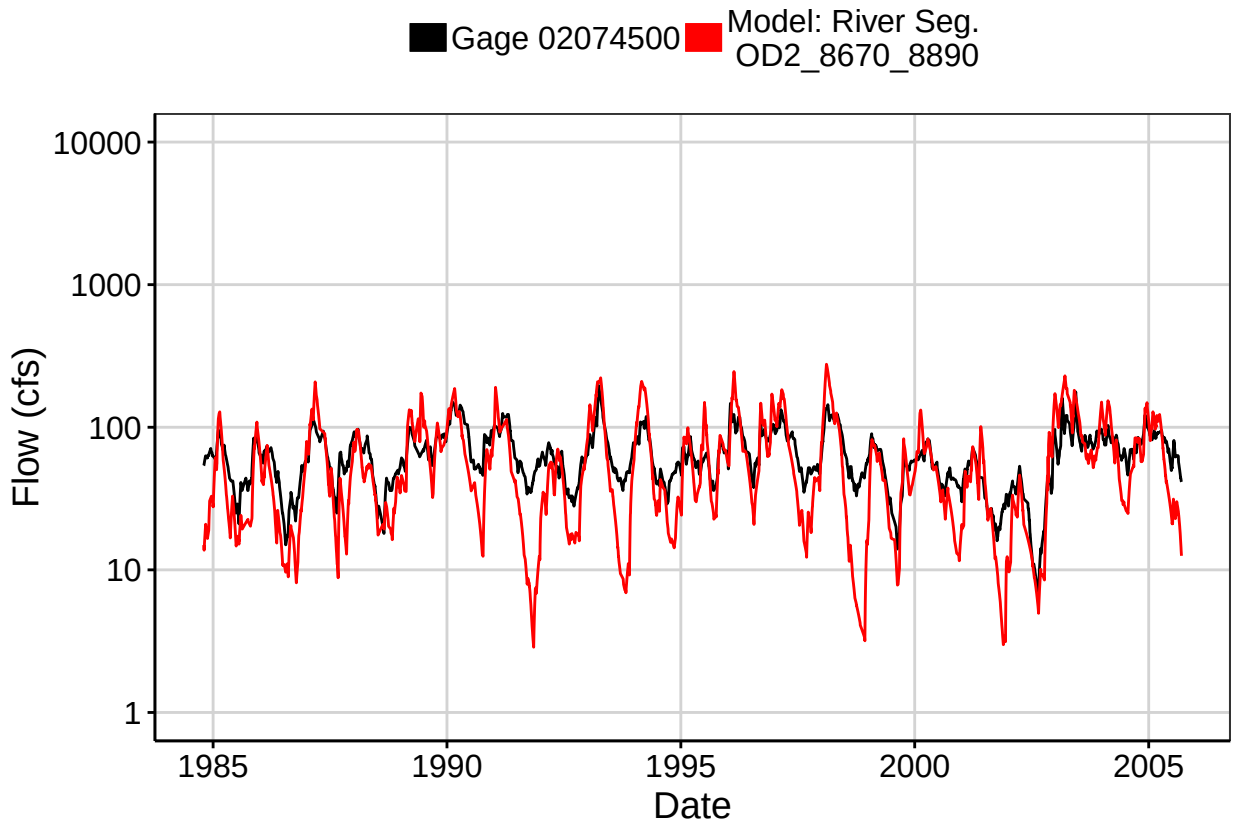


Fig. 5: Combined Baseflow

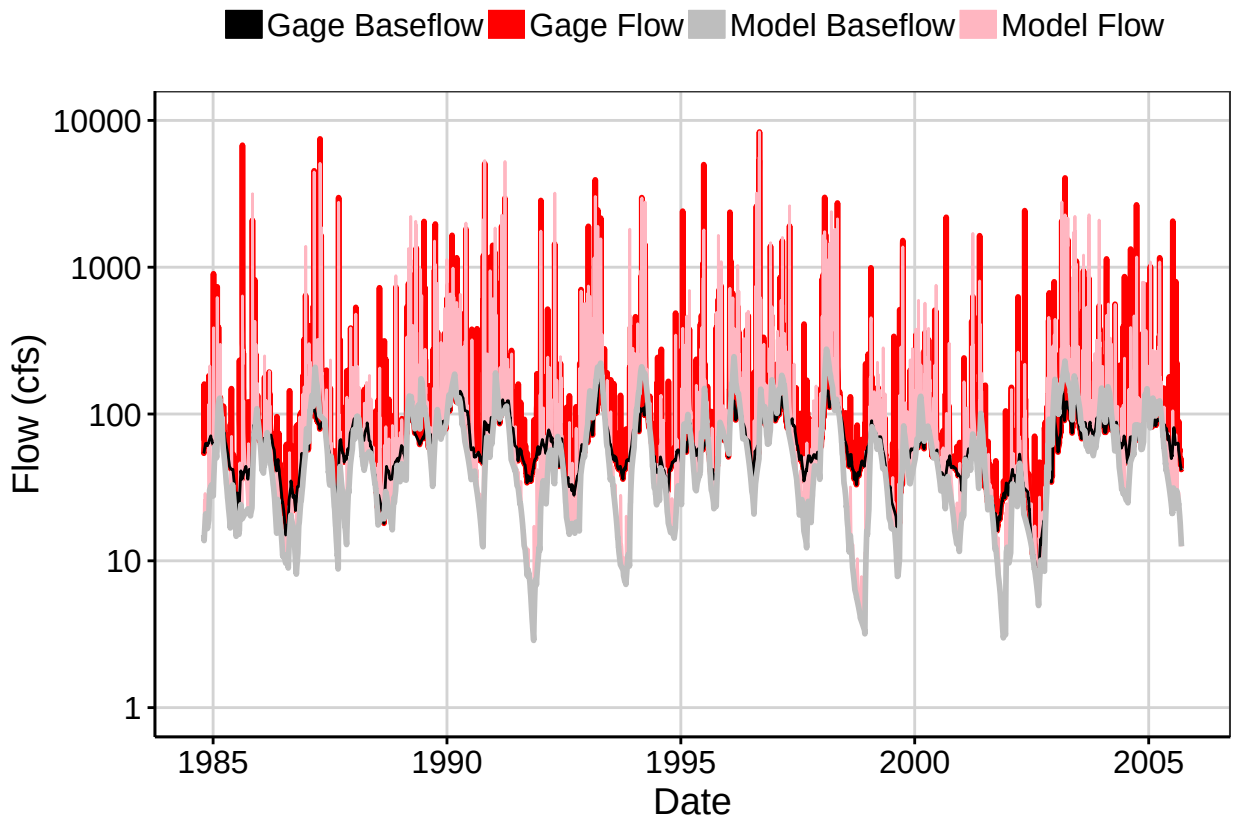


Fig. 6: Largest Error Segment

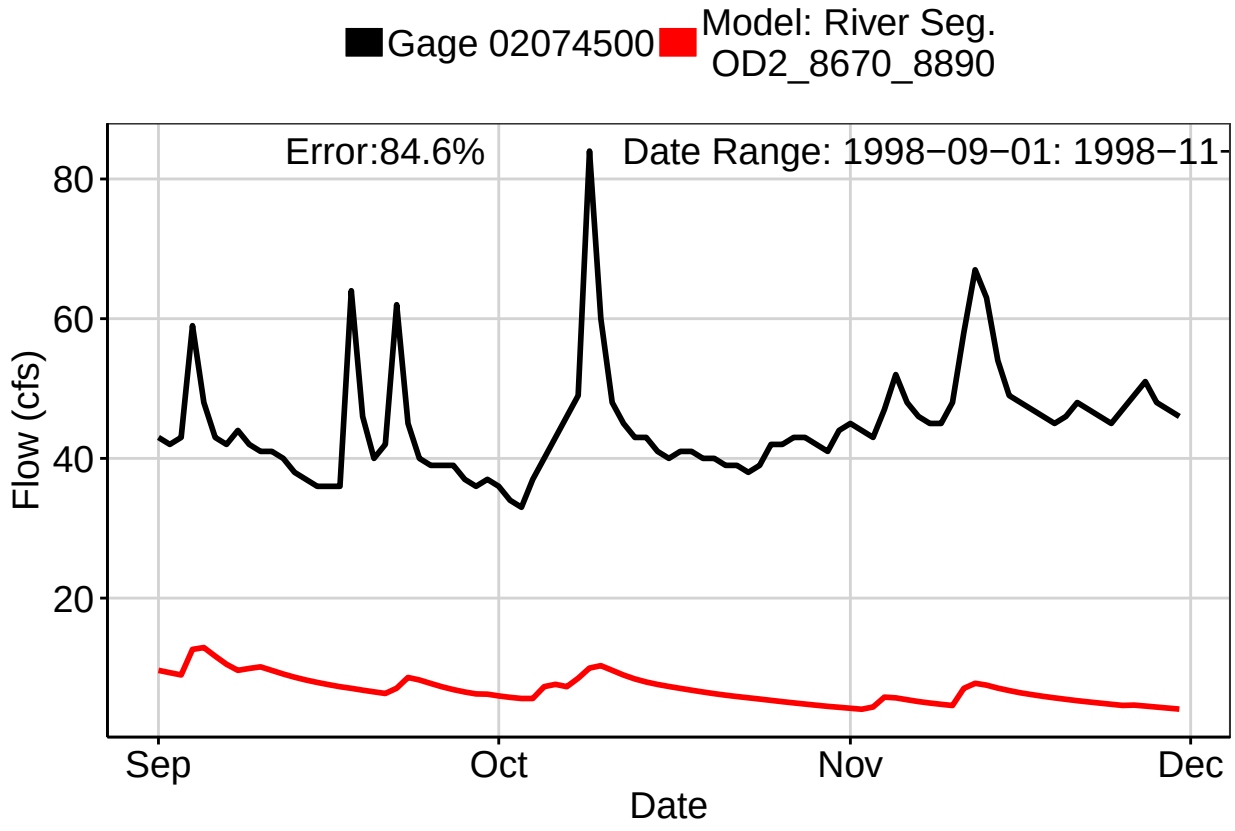


Fig. 7: Second Largest Error Segment

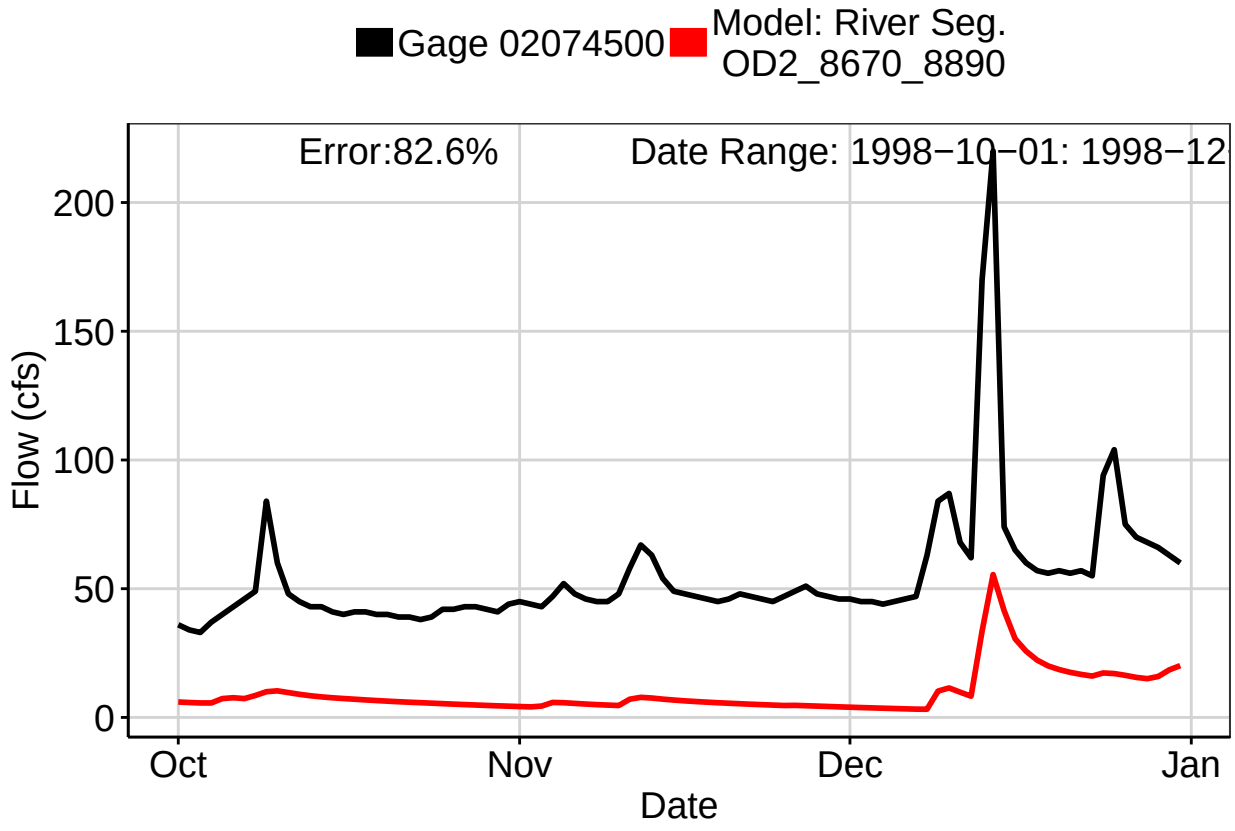


Fig. 8: Third Largest Error Segment

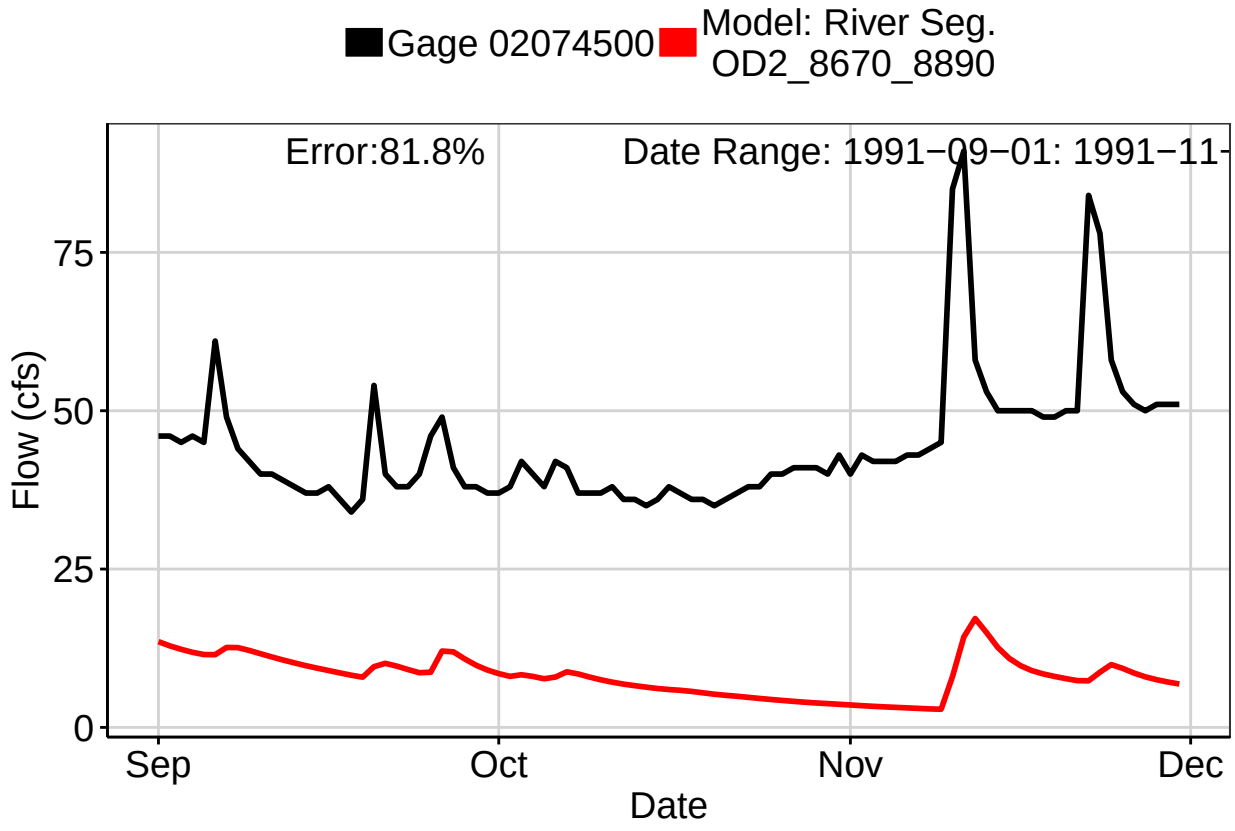


Fig. 9: Residuals Plot