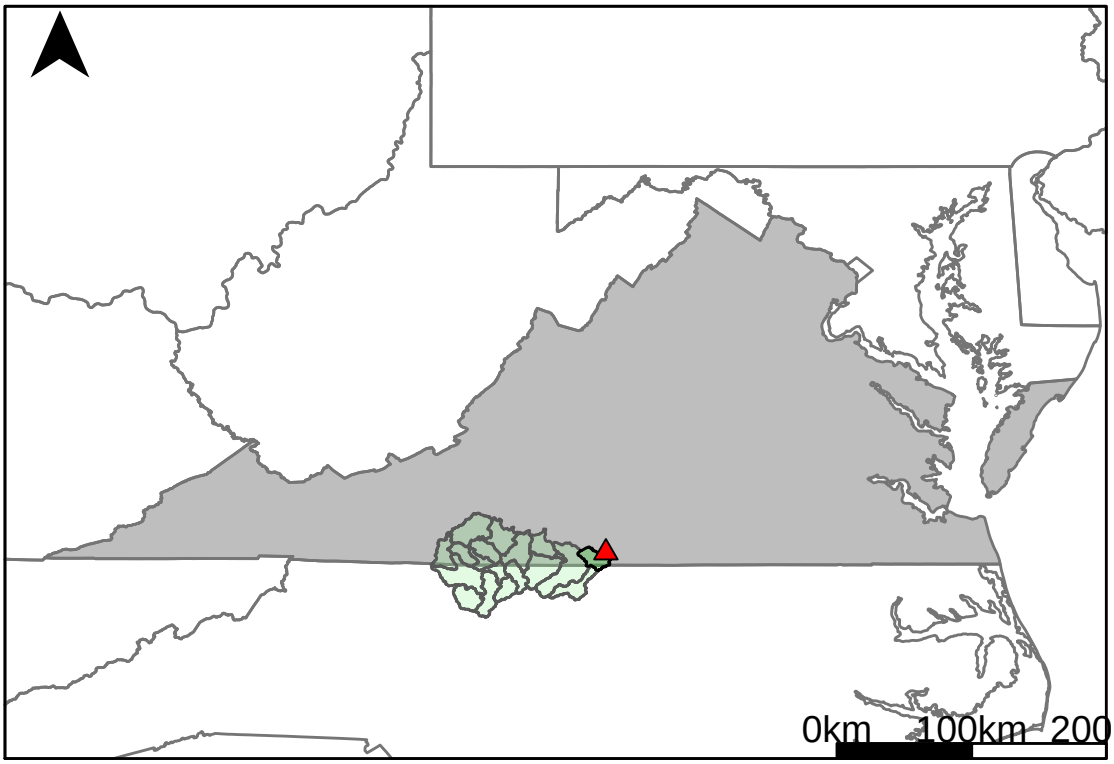
Appendix C.10: USGS Gage 02075500 vs. OD5_8780_8660



This river segment follows part of the flow of the Dan River. The gage is located in Halifax County, VA (Lat 3638'32", Long 7905'23") approximately 17 miles northeast of Danville, VA. Drainage area is 2587 sq. miles. This gage started taking data in 1950 and is still taking data. There are a number of dams and mills in Danville that regulated the low-flow conditions in this area. The average daily discharge error between the model and gage data for the 20 year timespan was 1.77%, with 35% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	770	555	27.9
Feb. Low Flow	1000	851	14.9
Mar. Low Flow	1180	1150	2.54
Apr. Low Flow	1310	1330	-1.53
May Low Flow	1720	2190	-27.3
Jun. Low Flow	1830	2450	-33.9
Jul. Low Flow	1820	1910	-4.95
Aug. Low Flow	1440	1480	-2.78
Sep. Low Flow	1260	1200	4.76
Oct. Low Flow	1050	864	17.7
Nov. Low Flow	819	695	15.1
Dec. Low Flow	736	606	17.7

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	2820	2770	1.77
Jan. Mean Flow	3430	3250	5.25
Feb. Mean Flow	3540	3850	-8.76
Mar. Mean Flow	4590	5230	-13.9
Apr. Mean Flow	3960	4280	-8.08
May Mean Flow	2930	2870	2.05
Jun. Mean Flow	2580	2450	5.04
Jul. Mean Flow	1990	1520	23.6
Aug. Mean Flow	1950	1570	19.5
Sep. Mean Flow	2330	2170	6.87
Oct. Mean Flow	1940	1900	2.06
Nov. Mean Flow	2090	1860	11
Dec. Mean Flow	2530	2340	7.51

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	2630	1640	37.6
Feb. High Flow	4810	5230	-8.73
Mar. High Flow	6410	4630	27.8
Apr. High Flow	9820	6630	32.5
May High Flow	9860	5880	40.4
Jun. High Flow	13200	11300	14.4
Jul. High Flow	9240	6950	24.8
Aug. High Flow	6570	4910	25.3
Sep. High Flow	3700	2920	21.1
Oct. High Flow	3990	2000	49.9
Nov. High Flow	3740	1450	61.2
Dec. High Flow	3040	1560	48.7

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	133	215	-61.7
Med. 1 Day Min	574	422	26.5
Min. 3 Day Min	135	218	-61.5
Med. 3 Day Min	757	436	42.4
Min. 7 Day Min	143	219	-53.1
Med. 7 Day Min	802	483	39.8
Min. 30 Day Min	230	237	-3.04
Med. 30 Day Min	1000	600	40
Min. 90 Day Min	353	388	-9.92
Med. 90 Day Min	1380	939	32
7Q10	381	275	27.8
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	872	2770	-218
Mean Baseflow	1540	1630	-5.84

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	53400	84500	-58.2
Med. 1 Day Max	28700	25000	12.9
Max. 3 Day Max	45400	60600	-33.5
Med. 3 Day Max	23100	19700	14.7
Max. 7 Day Max	30700	36000	-17.3
Med. 7 Day Max	14000	12500	10.7
Max. 30 Day Max	11900	13900	-16.8
Med. 30 Day Max	6270	6350	-1.28
Max. 90 Day Max	7980	9460	-18.5
Med. 90 Day Max	3780	4260	-12.7

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	382	286	25.1
5% Non-Exceedance	713	451	36.7
50% Non-Exceedance	1900	1700	10.5
95% Non-Exceedance	7570	8080	-6.74
99% Non-Exceedance	18900	18800	0.53
Sept. 10% Non-Exceedance	536	535	0.19

Fig. 1: Hydrograph

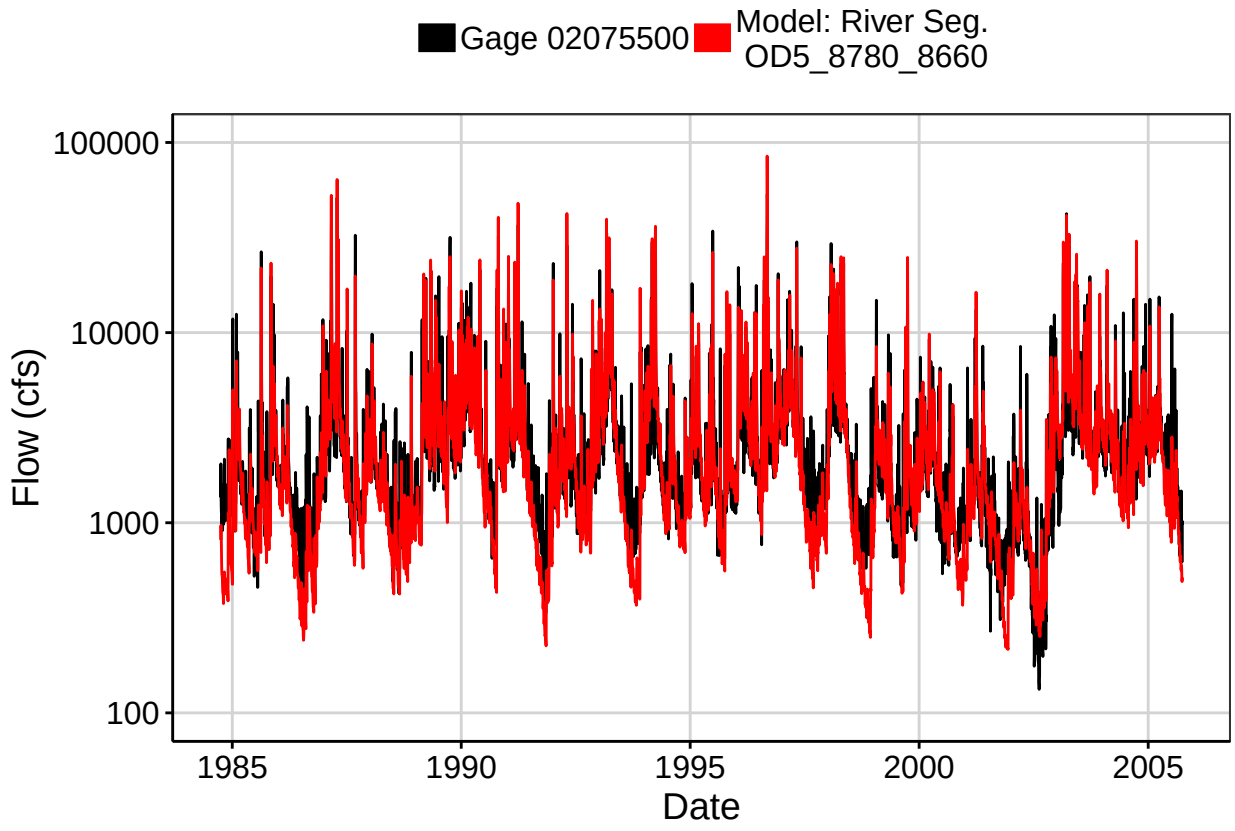


Fig. 2: Zoomed Hydrograph

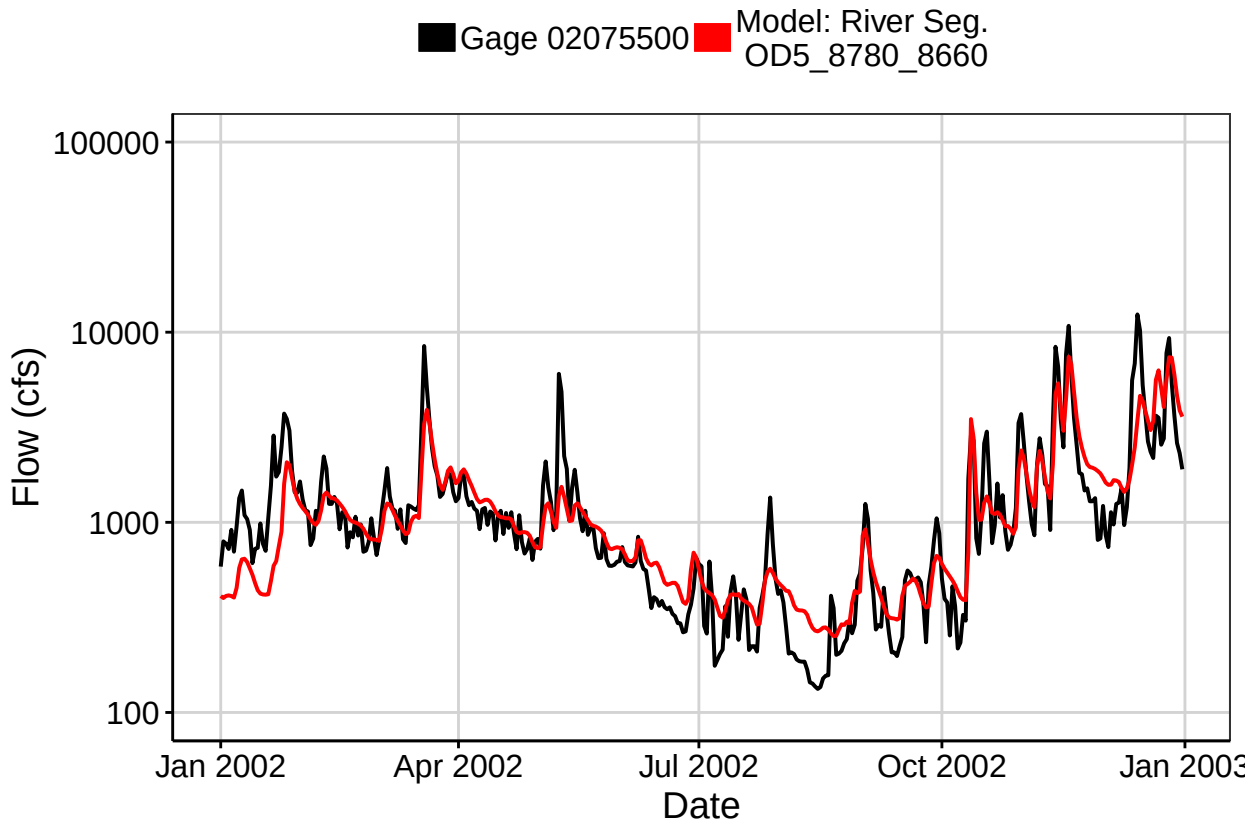


Fig. 3: Flow Exceedance

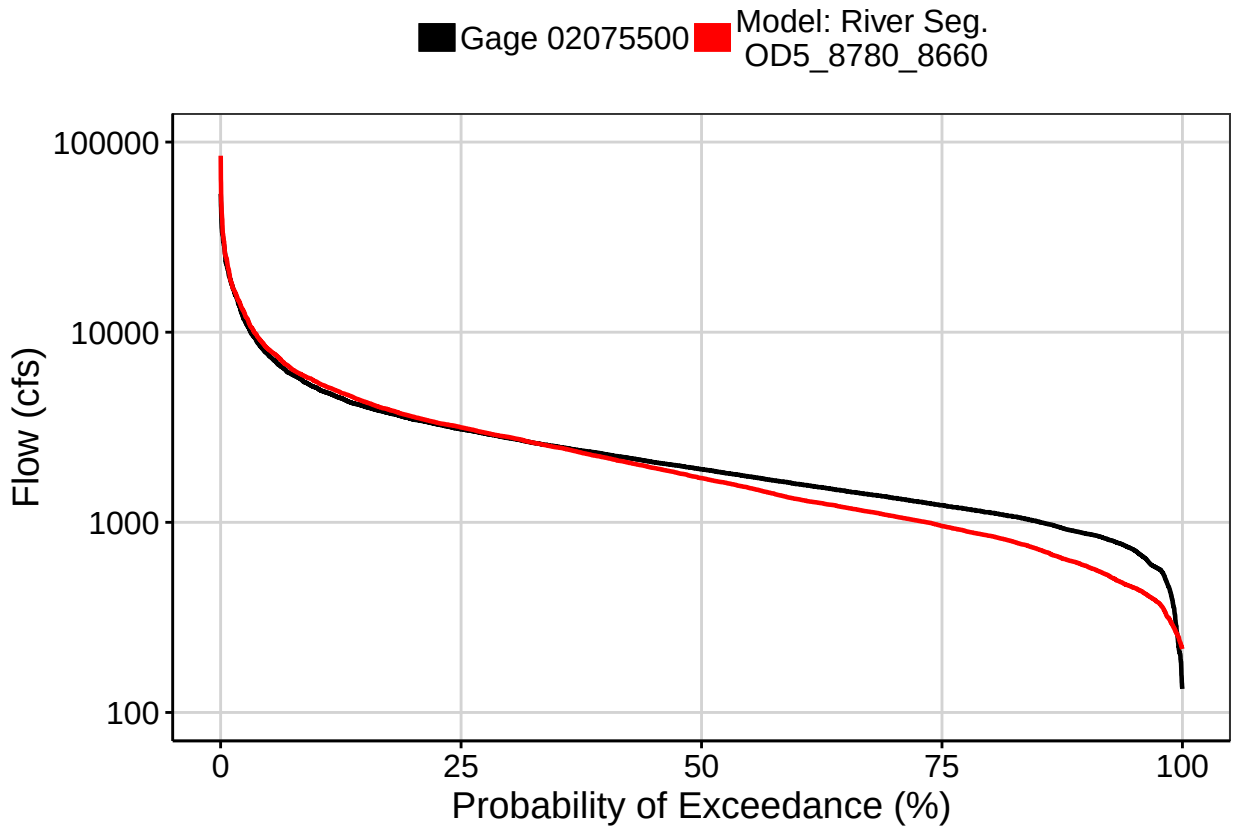


Fig. 4: Baseflow

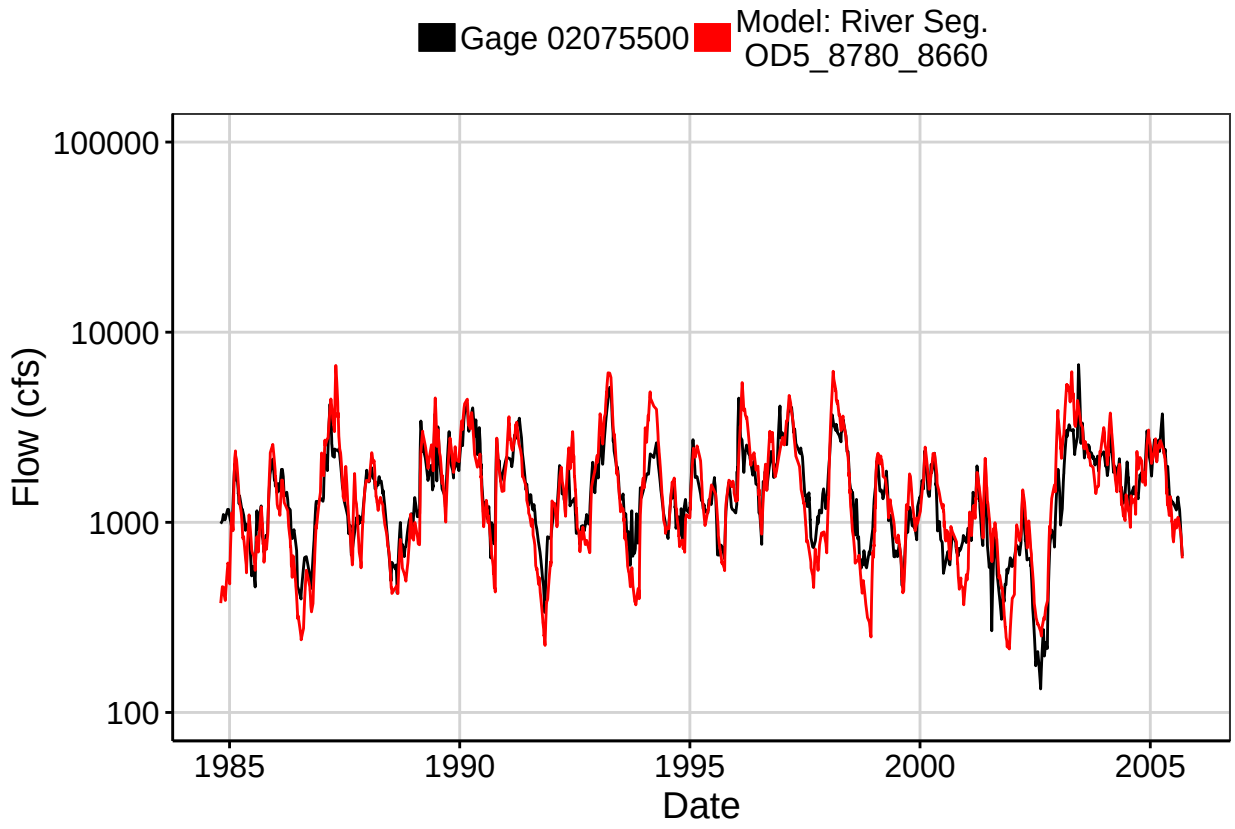


Fig. 5: Combined Baseflow

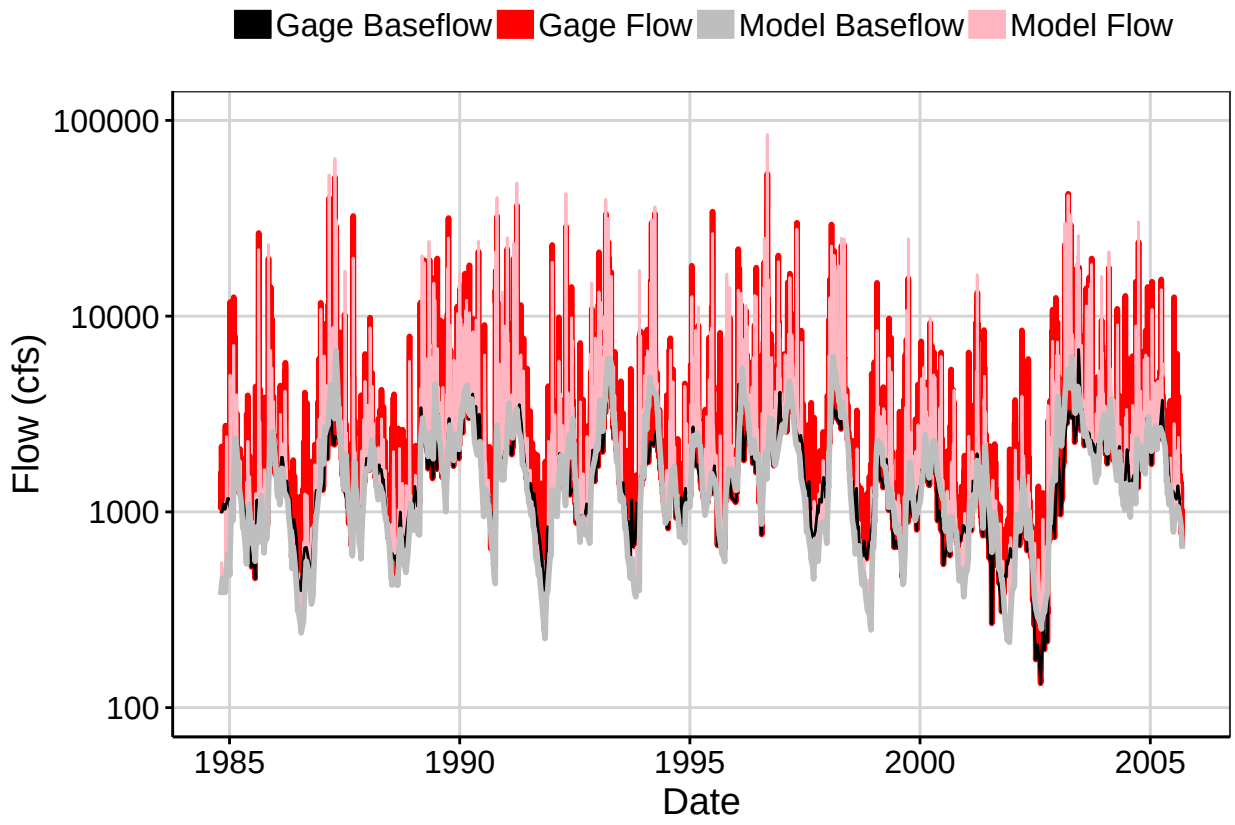


Fig. 6: Largest Error Segment

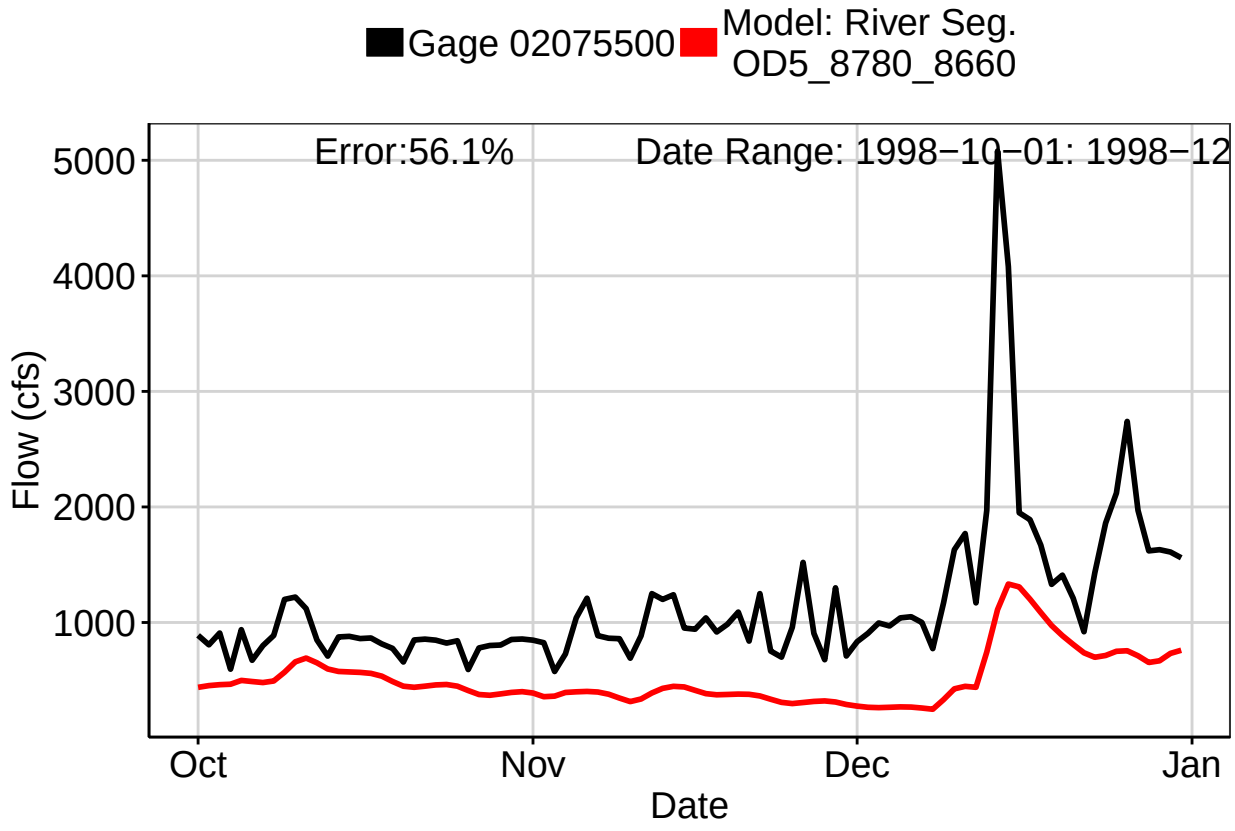


Fig. 7: Second Largest Error Segment

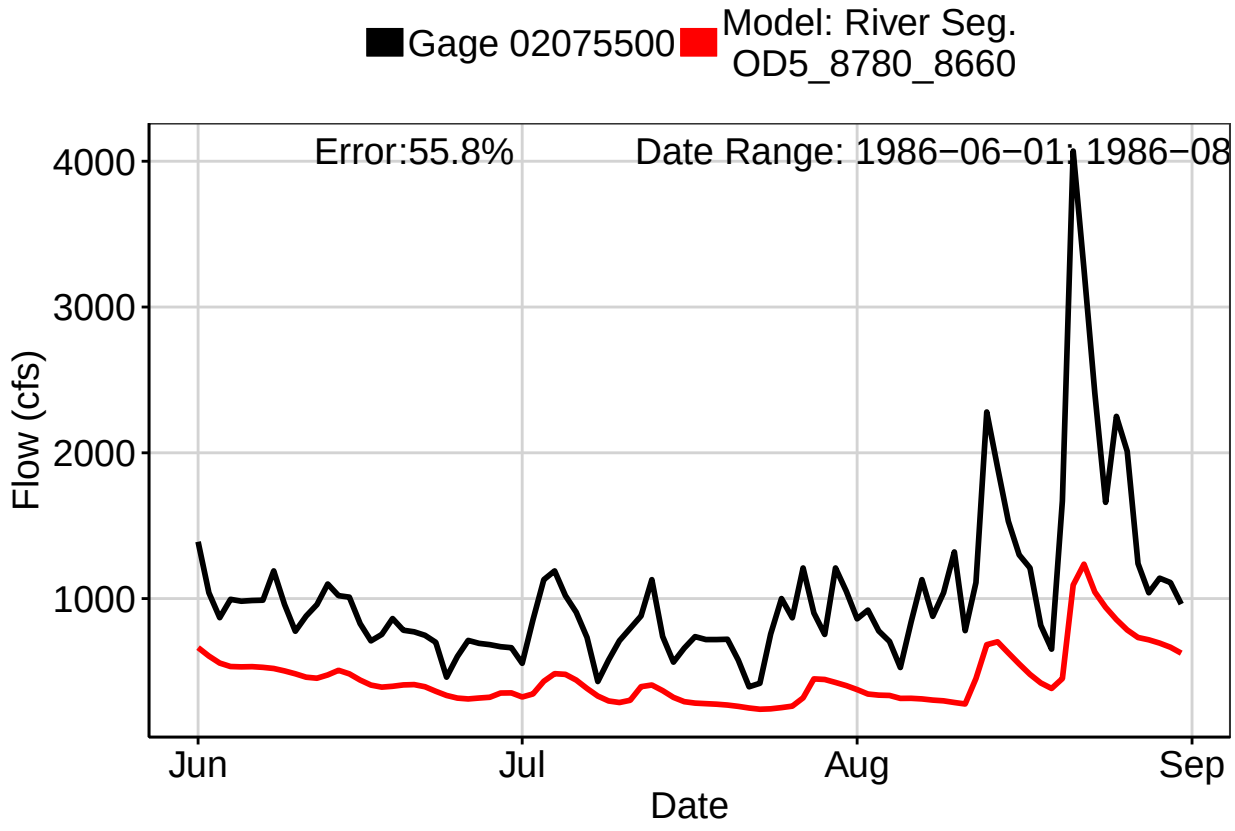


Fig. 8: Third Largest Error Segment

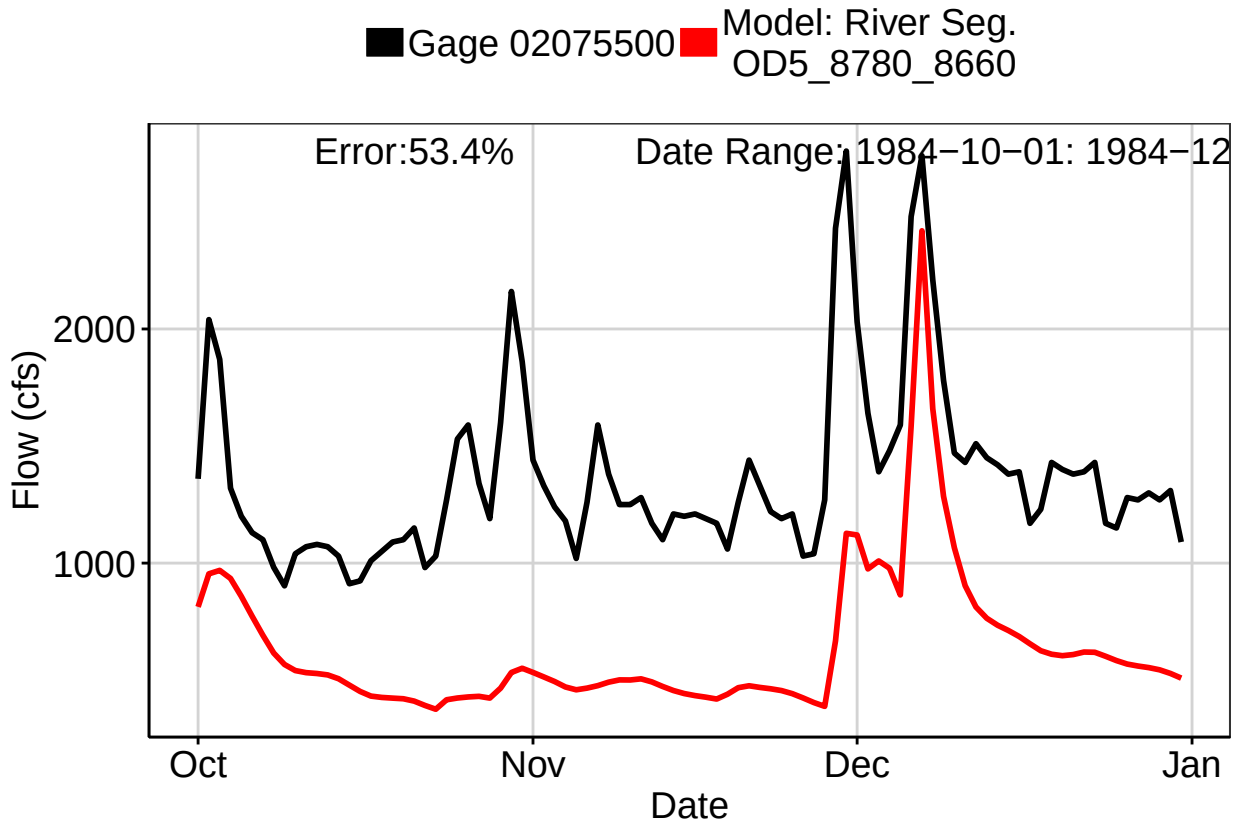


Fig. 9: Residuals Plot