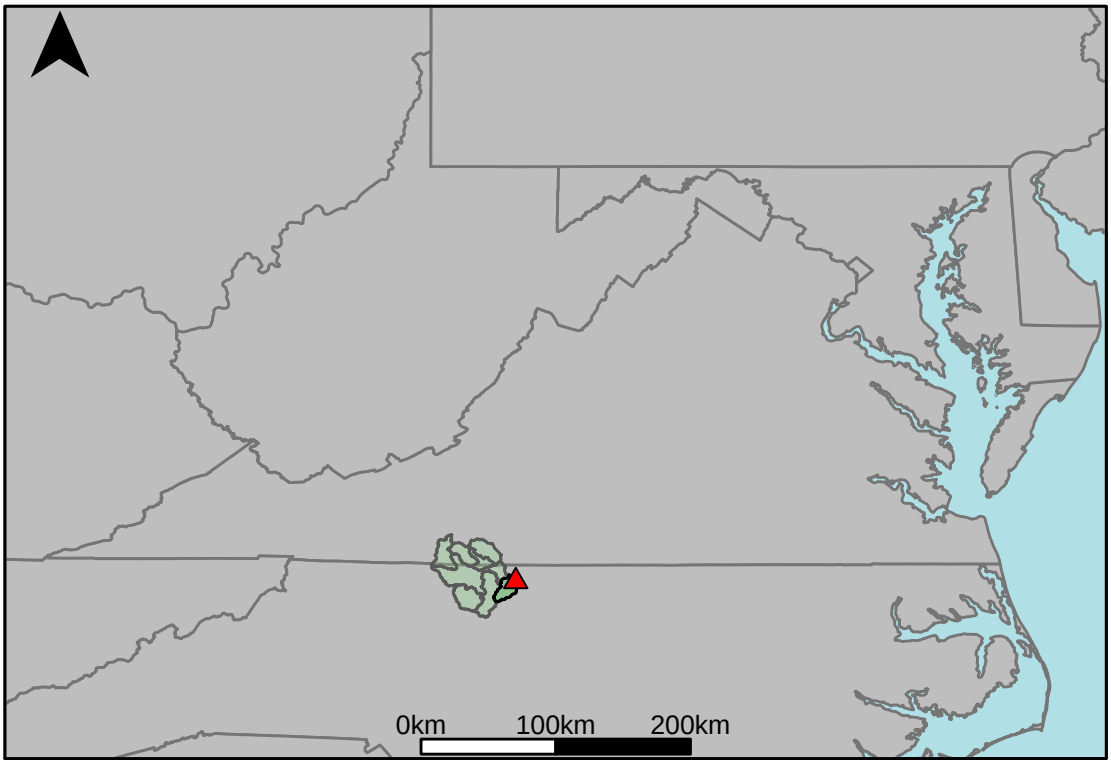
Appendix C.4: USGS Gage 02071000 vs. OD4_9140_8990



This river segment follows part of the flow of the Dan River, a tributary of the Roanoke River. The gage is located in Rockingham County, NC (Lat 3624'45", Long 7949'34") approximately 27 miles southwest of Danville, VA. Drainage area is 1053 sq. miles. This gage started taking data in 1939 and is still taking data. There are slight diurnal fluctuations and regulations at low flow stages caused by the Talbott and Townes reservoirs. The average daily discharge error between the model and gage data for the 20 year timespan was -2.59%, 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	424	277	-34.7
Feb. Low Flow	510	369	-27.6
Mar. Low Flow	591	552	-6.6
Apr. Low Flow	618	661	6.96
May Low Flow	814	971	19.3
Jun. Low Flow	880	956	8.64
Jul. Low Flow	804	816	1.49
Aug. Low Flow	715	702	-1.82
Sep. Low Flow	632	561	-11.2
Oct. Low Flow	488	450	-7.79
Nov. Low Flow	391	389	-0.51
Dec. Low Flow	338	312	-7.69

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	1160	1190	2.59
Jan. Mean Flow	1340	1390	3.73
Feb. Mean Flow	1410	1570	11.3
Mar. Mean Flow	1890	2160	14.3
Apr. Mean Flow	1630	1790	9.82
May Mean Flow	1220	1230	0.82
Jun. Mean Flow	1070	1090	1.87
Jul. Mean Flow	884	719	-18.7
Aug. Mean Flow	827	782	-5.44
Sep. Mean Flow	887	934	5.3
Oct. Mean Flow	811	785	-3.21
Nov. Mean Flow	895	823	-8.04
Dec. Mean Flow	1050	1010	-3.81

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	1020	782	-23.3
Feb. High Flow	2070	2120	2.42
Mar. High Flow	3190	2130	-33.2
Apr. High Flow	3940	4020	2.03
May High Flow	4230	2660	-37.1
Jun. High Flow	6330	6490	2.53
Jul. High Flow	2880	3560	23.6
Aug. High Flow	2130	2620	23
Sep. High Flow	1810	1320	-27.1
Oct. High Flow	1520	945	-37.8
Nov. High Flow	2060	794	-61.5
Dec. High Flow	1300	771	-40.7

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	63	93.8	48.9
Med. 1 Day Min	297	243	-18.2
Min. 3 Day Min	63.7	95.5	49.9
Med. 3 Day Min	310	245	-21
Min. 7 Day Min	65.3	99.6	52.5
Med. 7 Day Min	340	257	-24.4
Min. 30 Day Min	99.6	107	7.43
Med. 30 Day Min	402	326	-18.9
Min. 90 Day Min	156	187	19.9
Med. 90 Day Min	586	437	-25.4
7Q10	142	143	0.7
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	373	354	-5.09
Mean Baseflow	709	747	5.36

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	27800	31000	11.5
Med. 1 Day Max	15600	13900	-10.9
Max. 3 Day Max	18800	19700	4.79
Med. 3 Day Max	9560	9540	-0.21
Max. 7 Day Max	10100	10800	6.93
Med. 7 Day Max	5590	5580	-0.18
Max. 30 Day Max	5040	5750	14.1
Med. 30 Day Max	2560	2810	9.77
Max. 90 Day Max	3450	3930	13.9
Med. 90 Day Max	1630	2040	25.2

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	172	159	-7.56
5% Non-Exceedance	296	232	-21.6
50% Non-Exceedance	797	774	-2.89
95% Non-Exceedance	2860	3150	10.1
99% Non-Exceedance	7510	8300	10.5
Sept. 10% Non-Exceedance	293	295	0.68

Fig. 1: Hydrograph

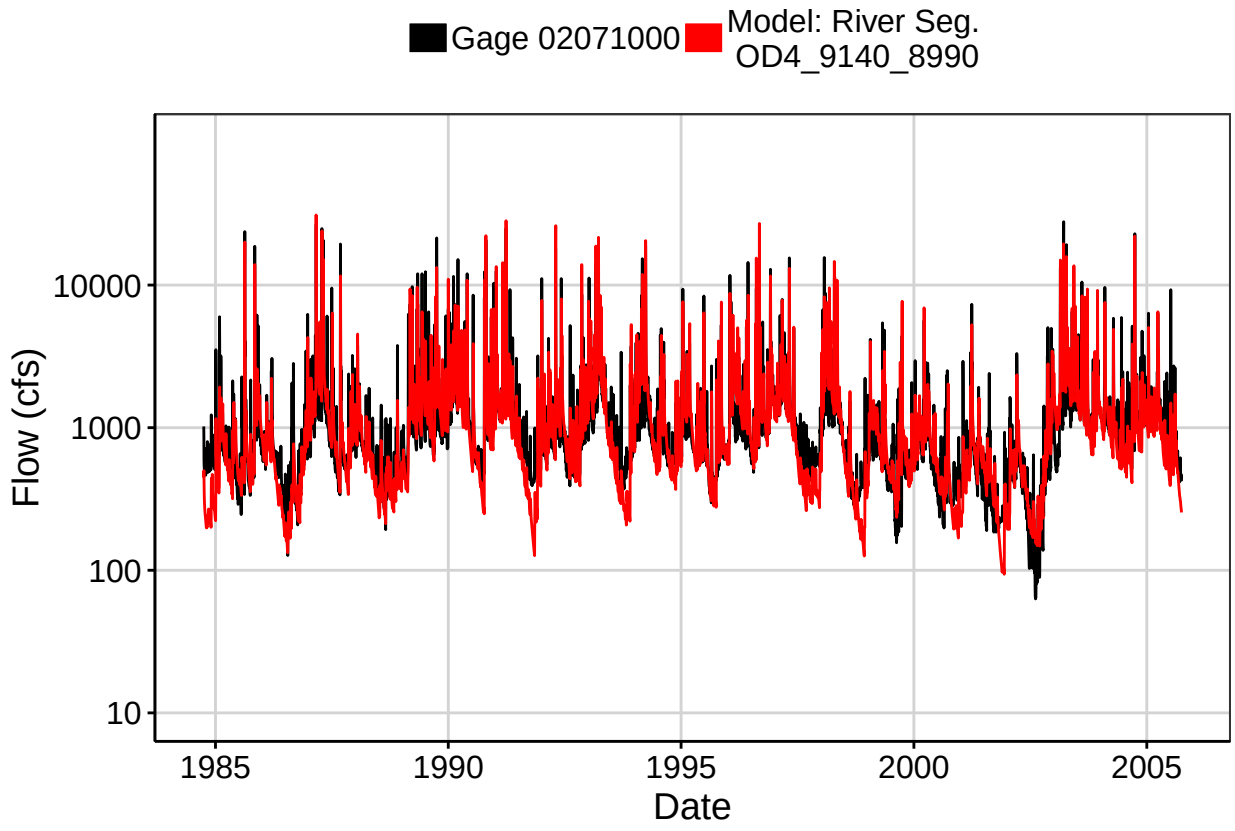


Fig. 2: Zoomed Hydrograph

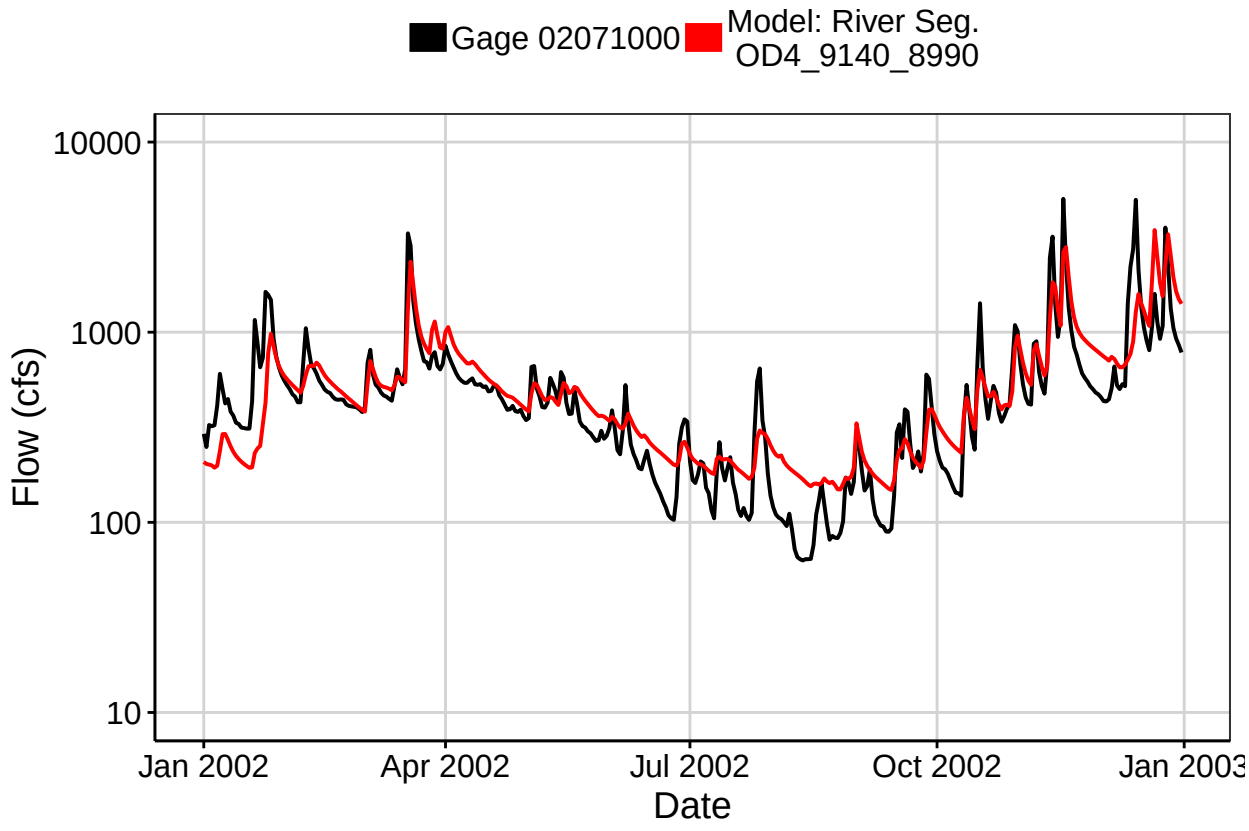


Fig. 3: Flow Exceedance

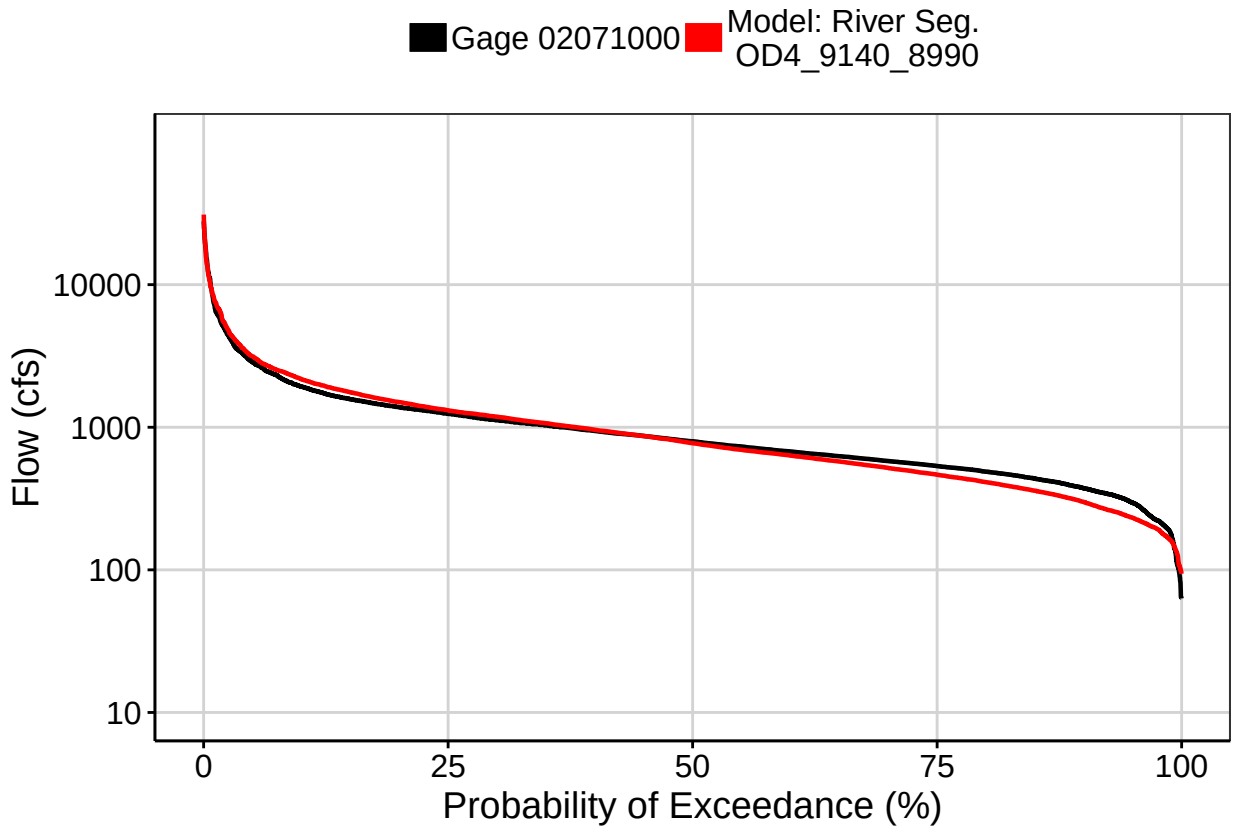


Fig. 4: Baseflow

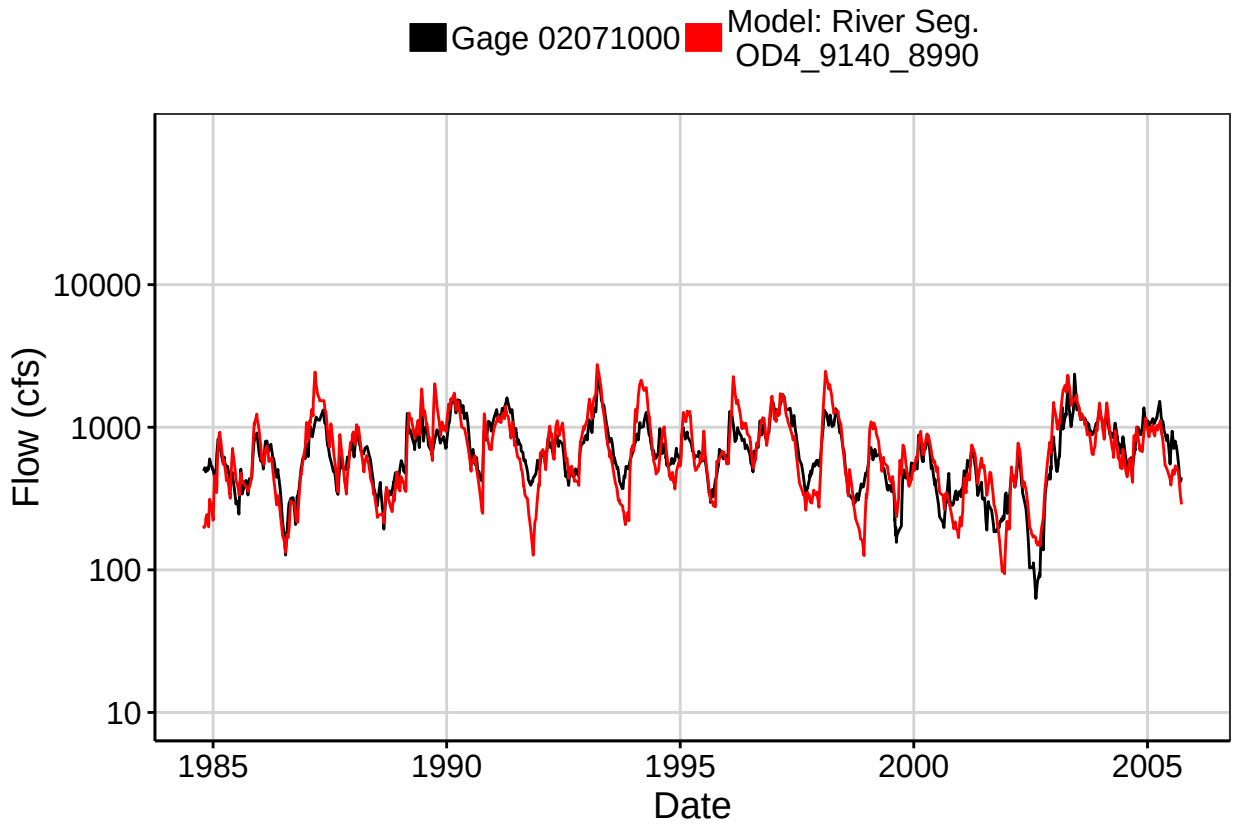


Fig. 5: Combined Baseflow

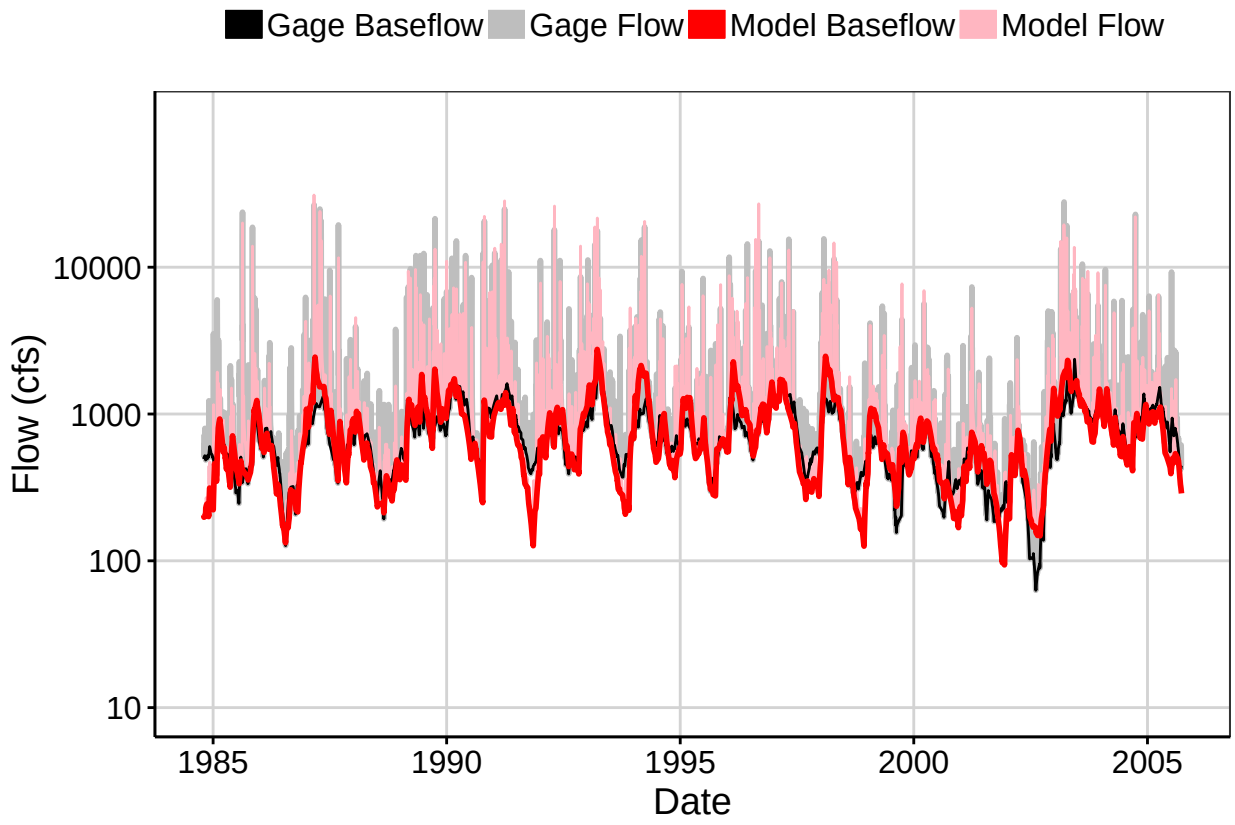


Fig. 6: Largest Error Segment

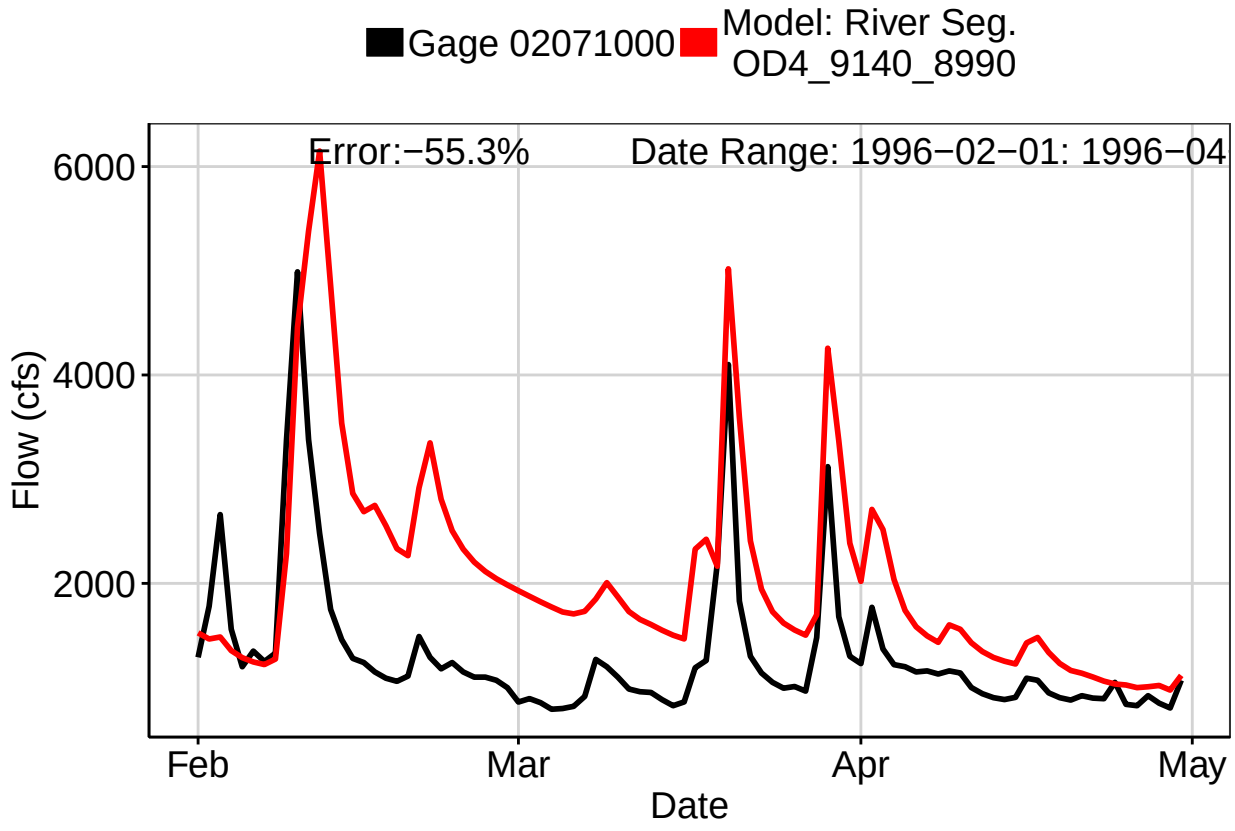


Fig. 7: Second Largest Error Segment

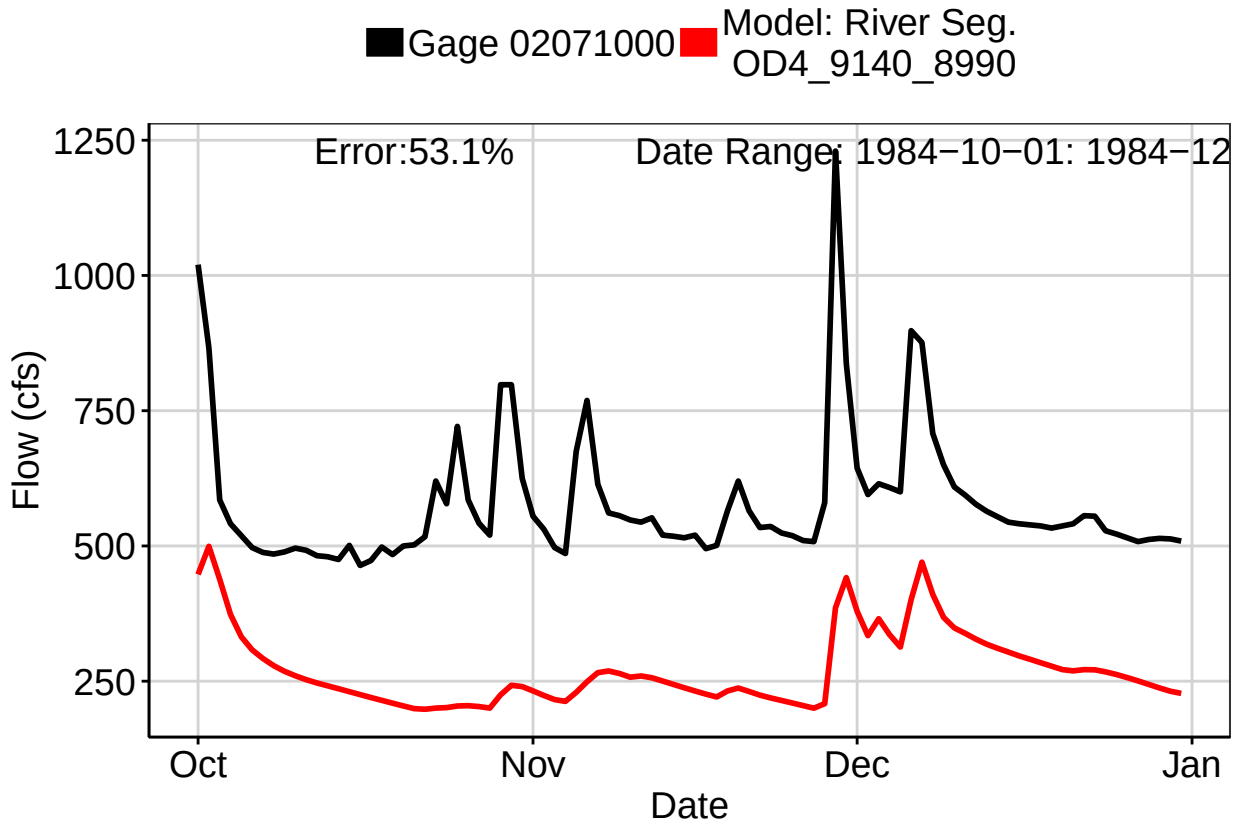


Fig. 8: Third Largest Error Segment

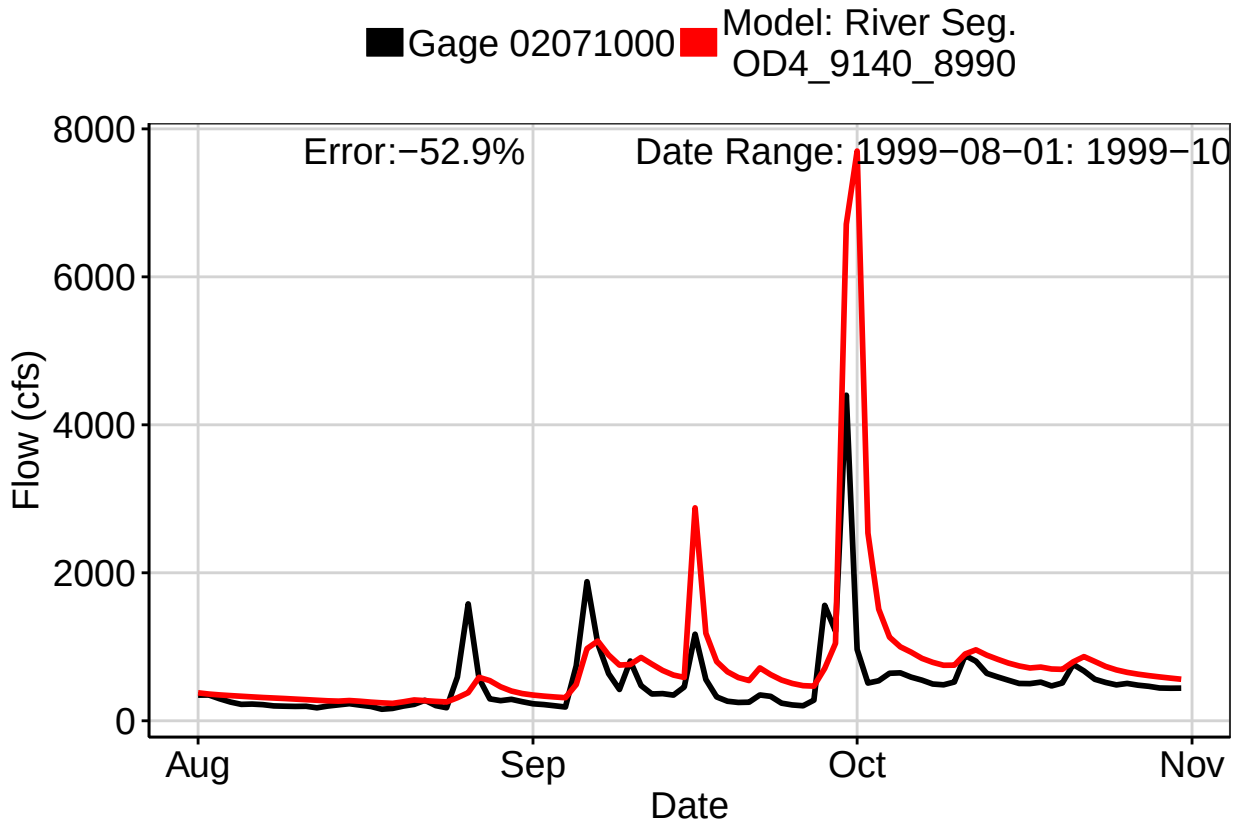


Fig. 9: Residuals Plot