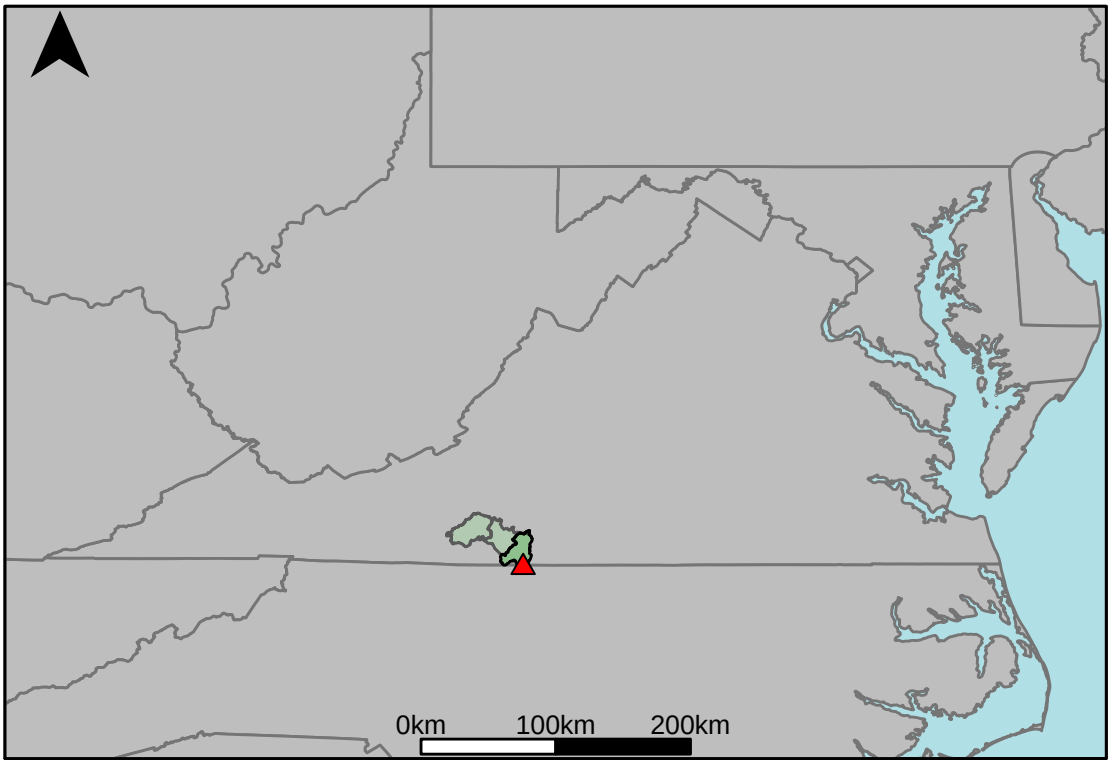
Appendix C.7: USGS Gage 02074000 vs. OD3_8720_8900



This river segment follows part of the flow of the Smith River, a tributary of the Dan River. The gage is located in Rockingham County, NC (Lat 3631'32", Long 7945'56") approximately 13 miles southeast of Martinsville, VA. Drainage area is 538 sq. miles. This gage started taking data in 1939 and is still taking data. This area is regulated by the Philpott Reservoir as well as a power plant in Martinsville, VA. The average daily discharge error between the model and gage data for the 20 year timespan was 7.55%, with 49.2% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	196	100	-49
Feb. Low Flow	200	150	-25
Mar. Low Flow	214	240	12.1
Apr. Low Flow	220	292	32.7
May Low Flow	270	405	50
Jun. Low Flow	242	415	71.5
Jul. Low Flow	347	268	-22.8
Aug. Low Flow	288	225	-21.9
Sep. Low Flow	245	169	-31
Oct. Low Flow	204	128	-37.3
Nov. Low Flow	187	106	-43.3
Dec. Low Flow	183	116	-36.6

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	702	649	-7.55
Jan. Mean Flow	761	735	-3.42
Feb. Mean Flow	747	897	20.1
Mar. Mean Flow	961	1150	19.7
Apr. Mean Flow	935	956	2.25
May Mean Flow	762	663	-13
Jun. Mean Flow	745	586	-21.3
Jul. Mean Flow	616	382	-38
Aug. Mean Flow	583	386	-33.8
Sep. Mean Flow	657	521	-20.7
Oct. Mean Flow	522	457	-12.5
Nov. Mean Flow	550	492	-10.5
Dec. Mean Flow	590	585	-0.85

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	563	587	4.26
Feb. High Flow	1110	1650	48.6
Mar. High Flow	1330	1290	-3.01
Apr. High Flow	1570	1610	2.55
May High Flow	1720	1340	-22.1
Jun. High Flow	2180	4120	89
Jul. High Flow	1760	1750	-0.57
Aug. High Flow	1600	1340	-16.2
Sep. High Flow	1440	783	-45.6
Oct. High Flow	1440	592	-58.9
Nov. High Flow	1020	431	-57.7
Dec. High Flow	928	395	-57.4

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	72.8	55.6	-23.6
Med. 1 Day Min	124	79.2	-36.1
Min. 3 Day Min	86	61.6	-28.4
Med. 3 Day Min	181	89.9	-50.3
Min. 7 Day Min	99.8	75.4	-24.4
Med. 7 Day Min	259	125	-51.7
Min. 30 Day Min	125	93.1	-25.5
Med. 30 Day Min	306	146	-52.3
Min. 90 Day Min	137	117	-14.6
Med. 90 Day Min	375	204	-45.6
7Q10	150	85.6	-42.9
Year of 90-Day Min. Flow	2002	1986	100
Drought Year Mean	254	234	-7.87
Mean Baseflow	298	299	0.34

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	15300	15500	1.31
Med. 1 Day Max	6350	7760	22.2
Max. 3 Day Max	8230	9880	20
Med. 3 Day Max	4090	4490	9.78
Max. 7 Day Max	5500	5850	6.36
Med. 7 Day Max	2840	2830	-0.35
Max. 30 Day Max	3050	3230	5.9
Med. 30 Day Max	1520	1530	0.66
Max. 90 Day Max	2050	2160	5.37
Med. 90 Day Max	1150	1090	-5.22

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	115	78.4	-31.8
5% Non-Exceedance	185	115	-37.8
50% Non-Exceedance	496	401	-19.2
95% Non-Exceedance	1770	1790	1.13
99% Non-Exceedance	3980	4210	5.78
Sept. 10% Non-Exceedance	124	185	49.2

Fig. 1: Hydrograph

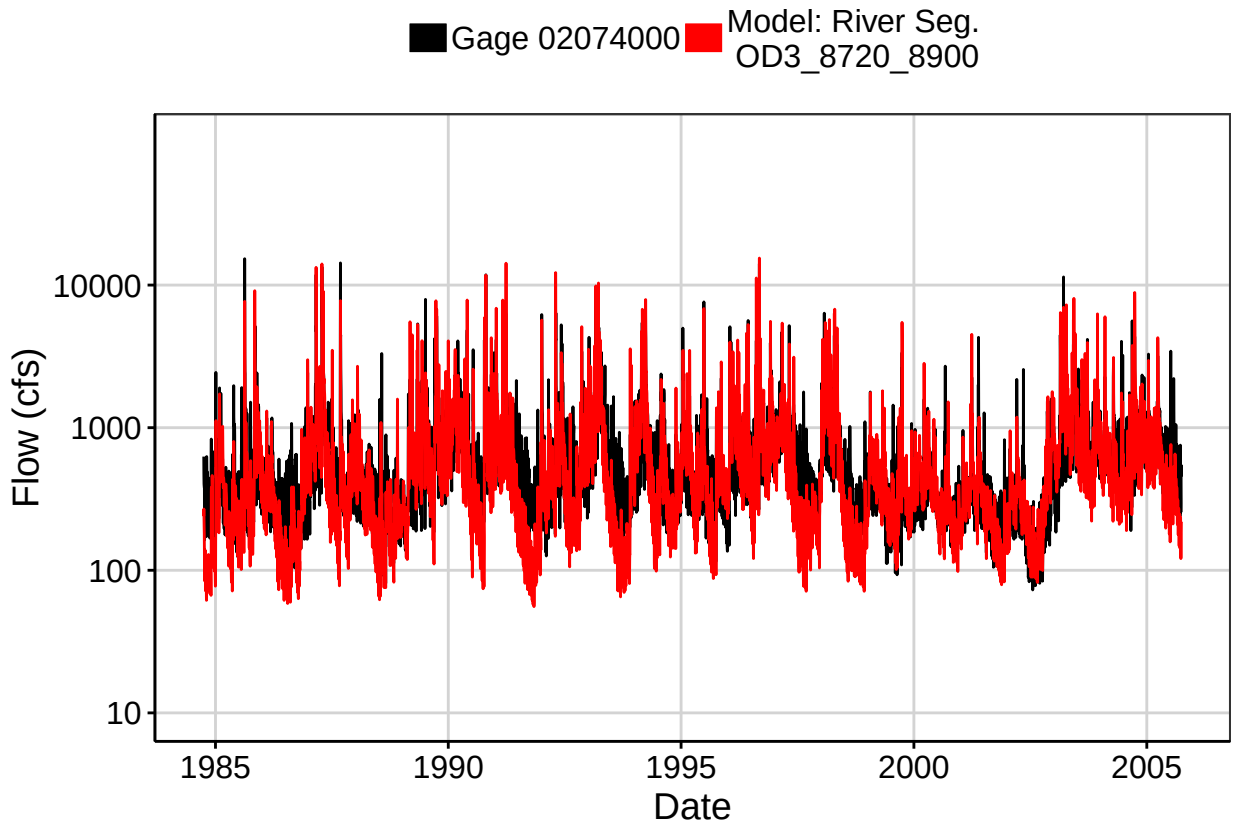


Fig. 2: Zoomed Hydrograph

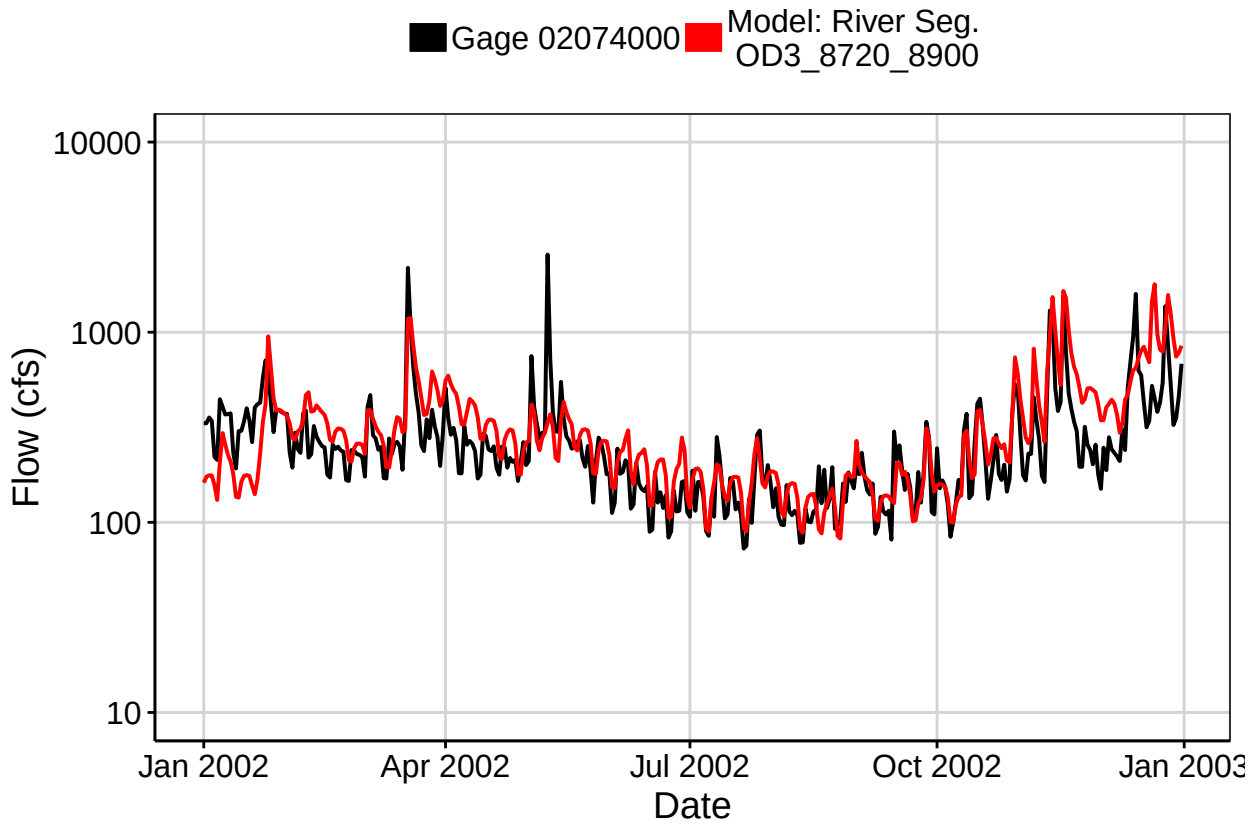


Fig. 3: Flow Exceedance

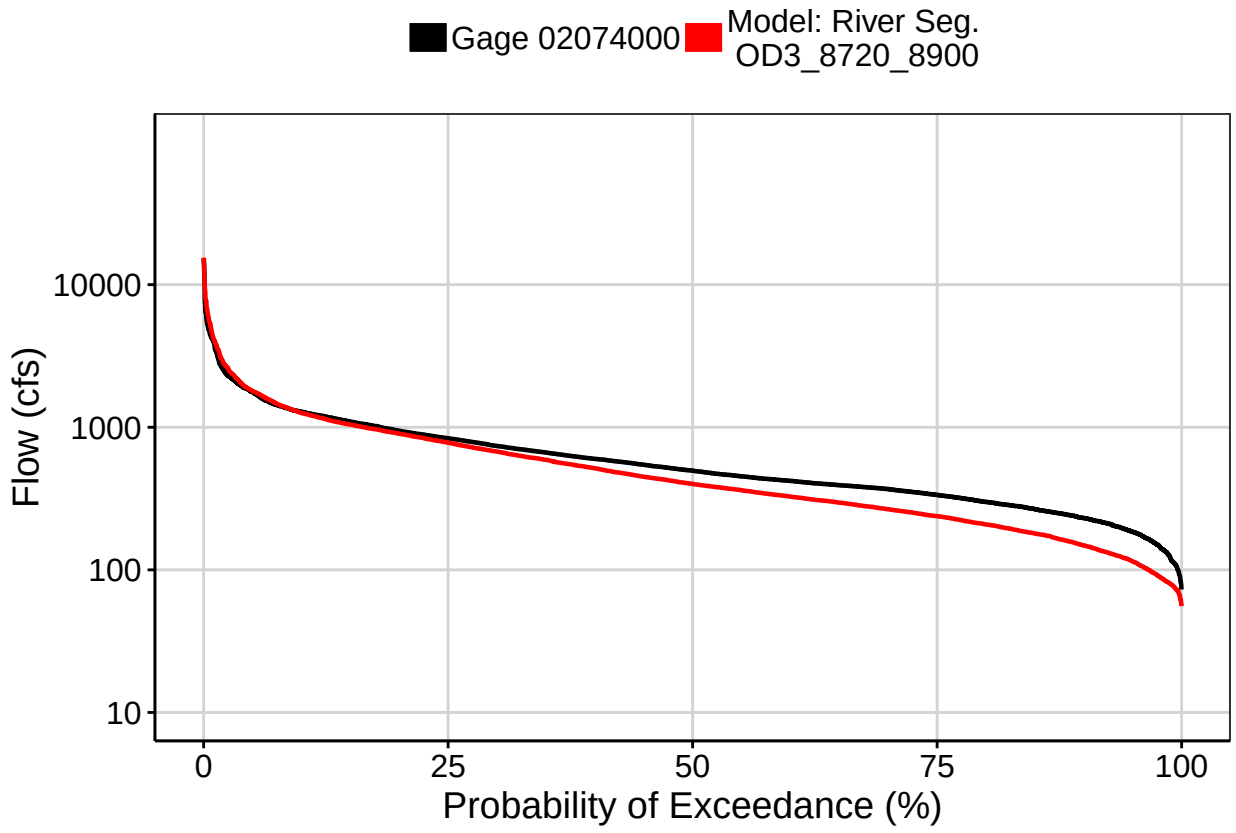


Fig. 4: Baseflow

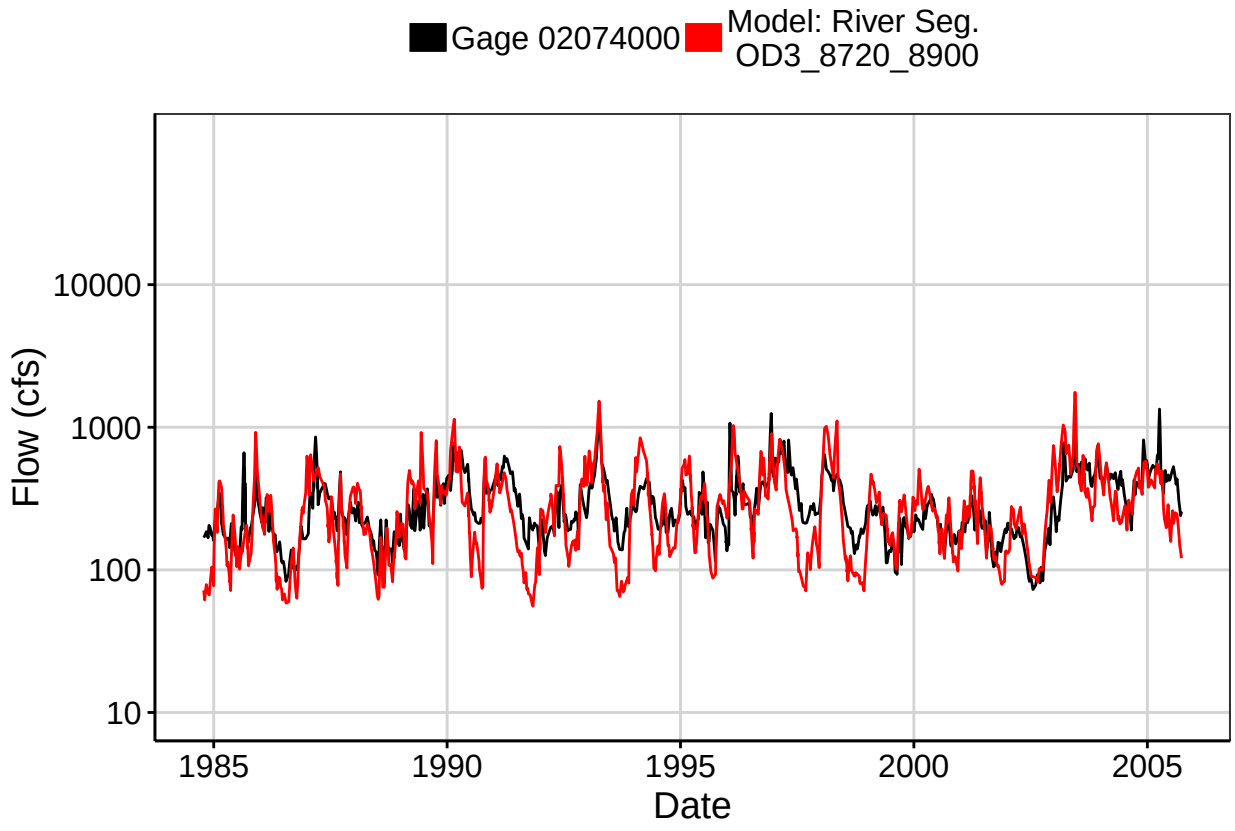


Fig. 5: Combined Baseflow

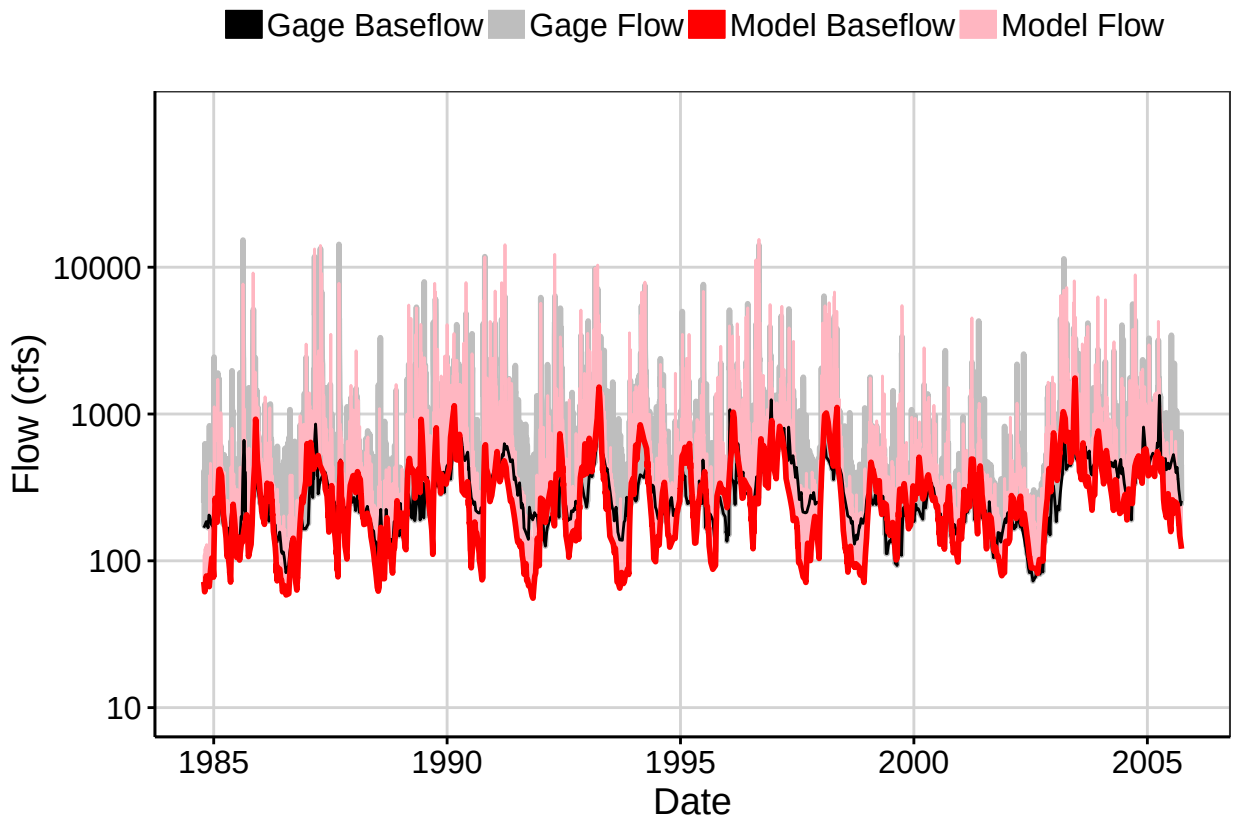


Fig. 6: Largest Error Segment

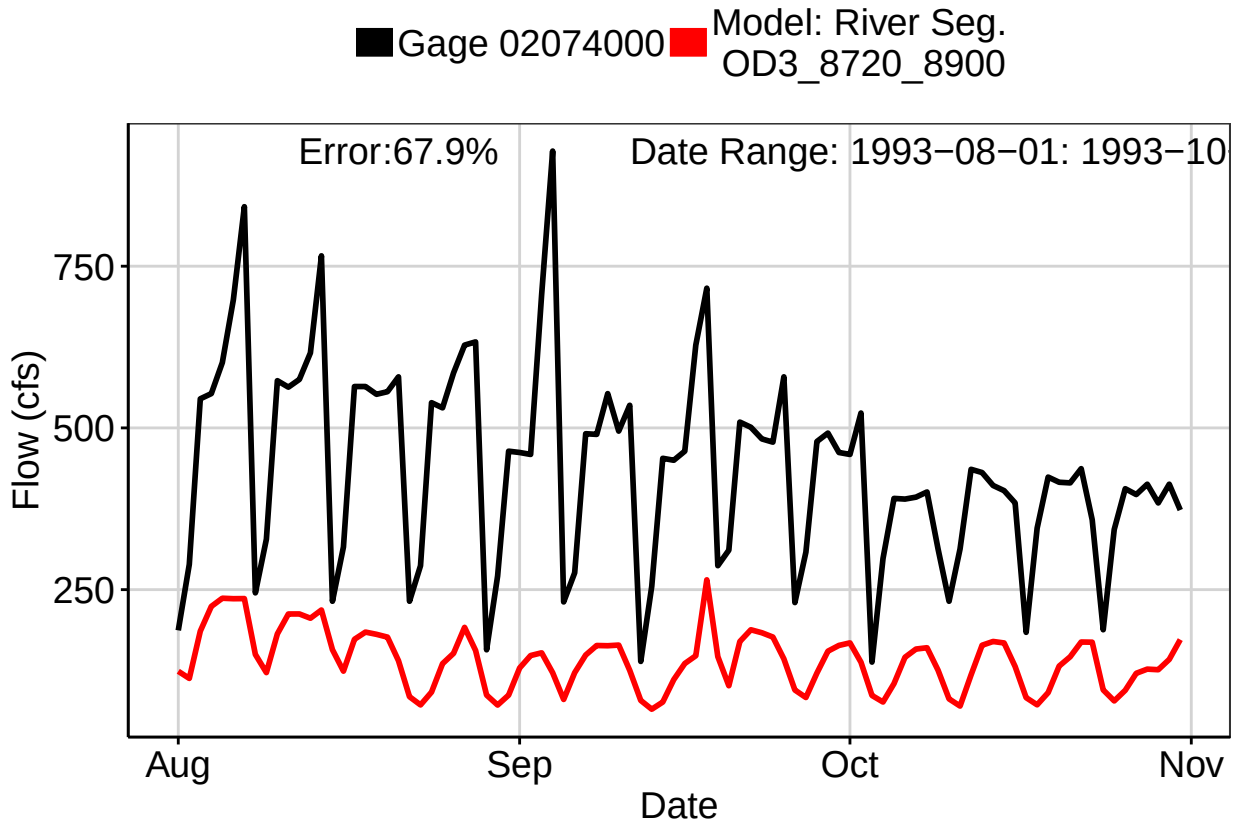


Fig. 7: Second Largest Error Segment

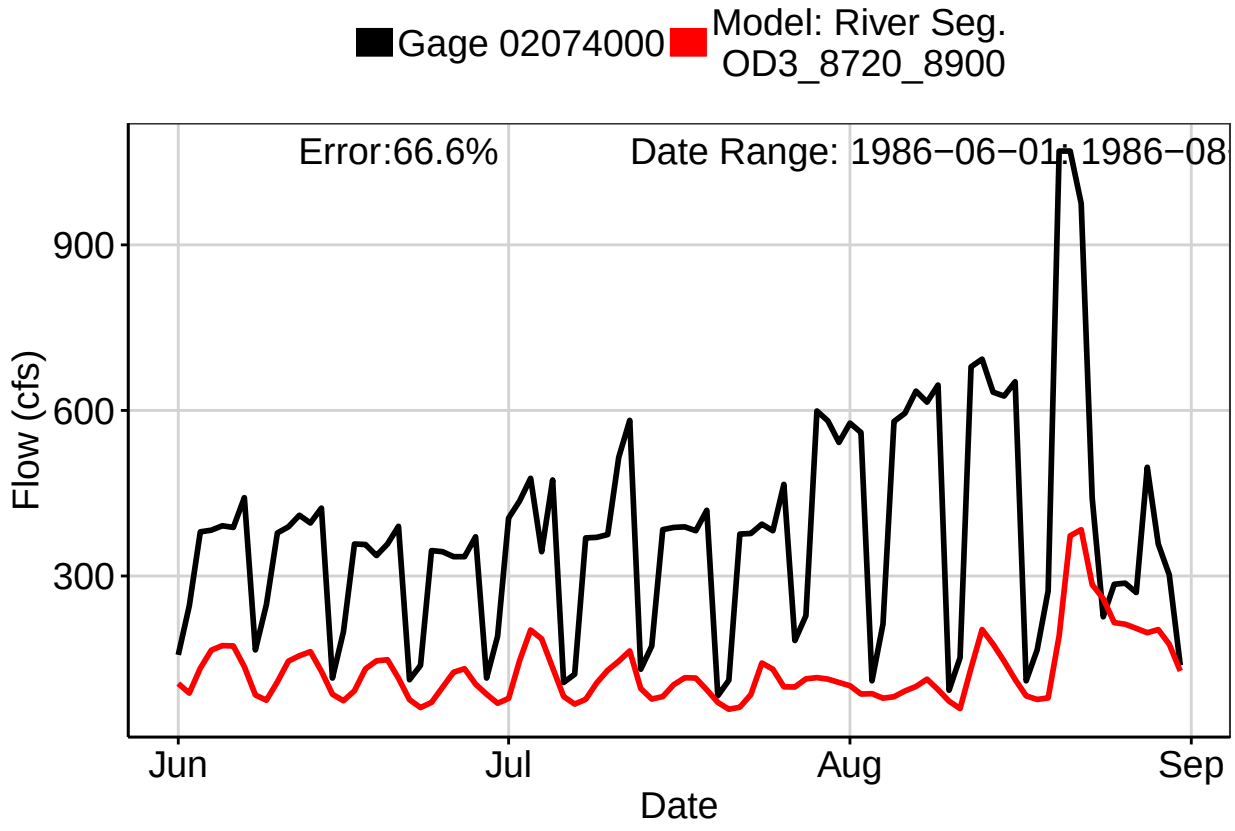


Fig. 8: Third Largest Error Segment

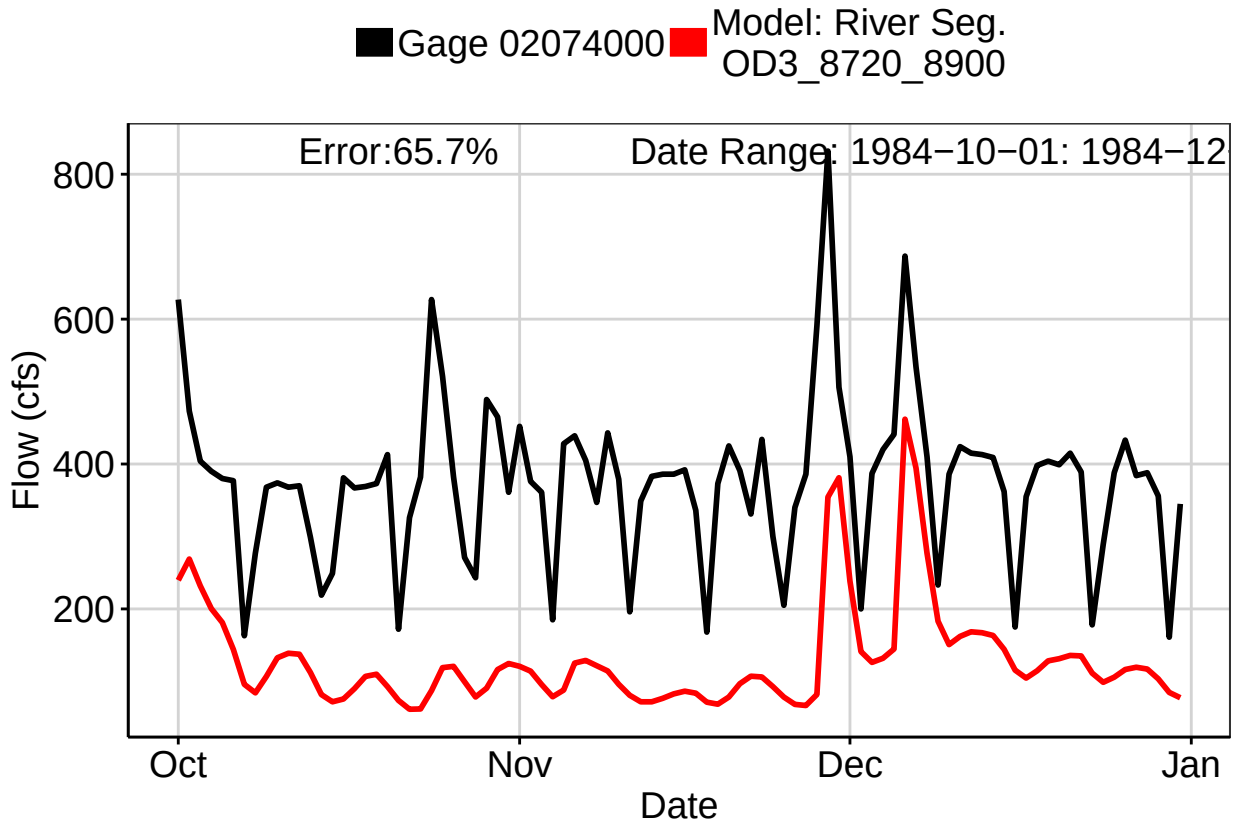


Fig. 9: Residuals Plot