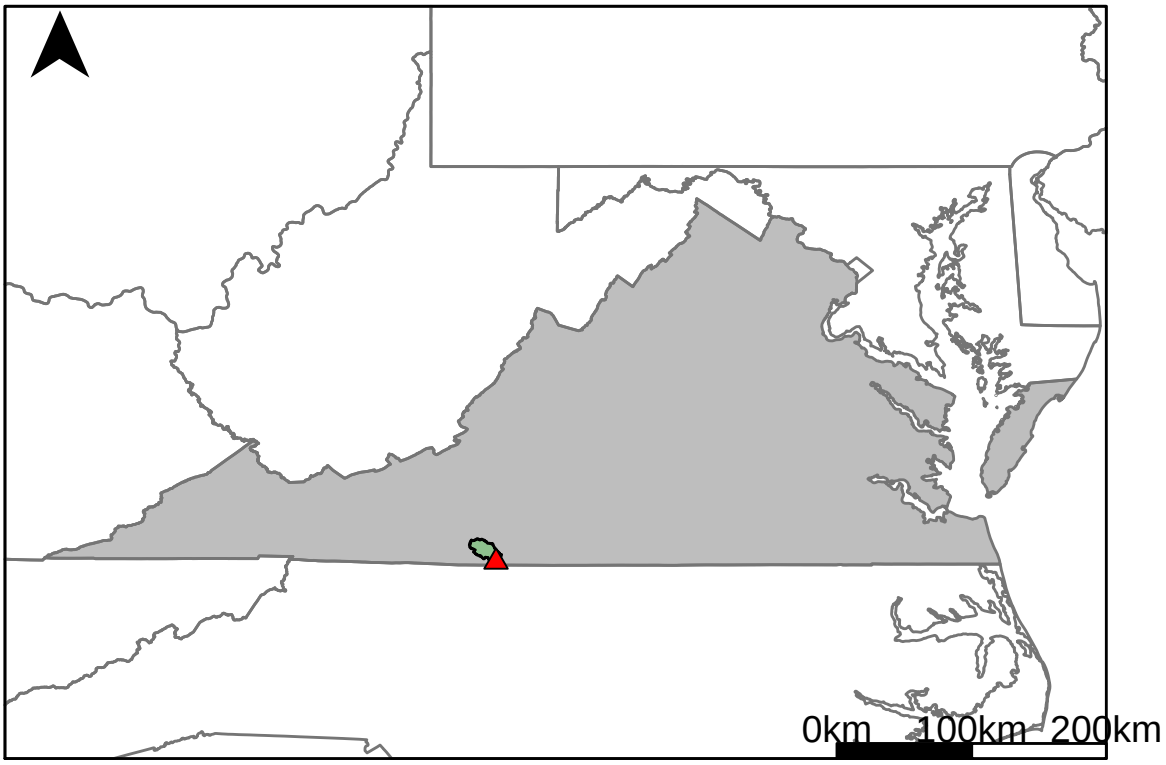
Appendix C.3: USGS Gage 02070000 vs. OD3_8850_8931



This river segment follows part of the flow of the North Mayo River, a tributary of the Dan River. The gage is located in Henry County, VA (Lat 3634'05", Long 7959'15") approximately 10 miles southwest of Martinsville, VA. Drainage area is 108 sq. miles. This gage started taking data in 1928 and is still taking data. There are no known anthropogenic alterations in this area that would affect the flow conditions. The average daily discharge error between the model and gage data for the 20 year timespan was -6.62%, with 57.9% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	61	30.9	49.3
Feb. Low Flow	71	42.9	39.6
Mar. Low Flow	80	67.3	15.9
Apr. Low Flow	85	72	15.3
May Low Flow	97	119	-22.7
Jun. Low Flow	97	119	-22.7
Jul. Low Flow	94.4	87.1	7.73
Aug. Low Flow	83.2	66.8	19.7
Sep. Low Flow	73.5	54.3	26.1
Oct. Low Flow	71	39.8	43.9
Nov. Low Flow	63	35.1	44.3
Dec. Low Flow	54	34.9	35.4

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	136	145	-6.62
Jan. Mean Flow	149	177	-18.8
Feb. Mean Flow	153	204	-33.3
Mar. Mean Flow	199	261	-31.2
Apr. Mean Flow	167	202	-21
May Mean Flow	134	141	-5.22
Jun. Mean Flow	140	129	7.86
Jul. Mean Flow	126	80.7	36
Aug. Mean Flow	112	90.4	19.3
Sep. Mean Flow	123	116	5.69
Oct. Mean Flow	99.4	92.9	6.54
Nov. Mean Flow	116	109	6.03
Dec. Mean Flow	120	136	-13.3

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	148	101	31.8
Feb. High Flow	267	337	-26.2
Mar. High Flow	299	287	4.01
Apr. High Flow	520	485	6.73
May High Flow	412	375	8.98
Jun. High Flow	730	975	-33.6
Jul. High Flow	284	385	-35.6
Aug. High Flow	339	291	14.2
Sep. High Flow	336	163	51.5
Oct. High Flow	245	104	57.6
Nov. High Flow	222	80.9	63.6
Dec. High Flow	211	98.6	53.3

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	5.92	7.32	-23.6
Med. 1 Day Min	44	22.4	49.1
Min. 3 Day Min	5.97	7.5	-25.6
Med. 3 Day Min	45	23.2	48.4
Min. 7 Day Min	6.39	7.84	-22.7
Med. 7 Day Min	47.1	24.8	47.3
Min. 30 Day Min	11.7	9.84	15.9
Med. 30 Day Min	57.6	31.6	45.1
Min. 90 Day Min	16.9	20.4	-20.7
Med. 90 Day Min	74.2	46.7	37.1
7Q10	22.3	12.5	43.9
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	43.5	145	-233
Mean Baseflow	86.5	85.9	0.69

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	7460	4200	43.7
Med. 1 Day Max	2070	2100	-1.45
Max. 3 Day Max	3390	2320	31.6
Med. 3 Day Max	1180	1210	-2.54
Max. 7 Day Max	1600	1230	23.1
Med. 7 Day Max	684	830	-21.3
Max. 30 Day Max	539	658	-22.1
Med. 30 Day Max	330	368	-11.5
Max. 90 Day Max	379	463	-22.2
Med. 90 Day Max	214	257	-20.1

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	19.8	15.4	22.2
5% Non-Exceedance	39	24.1	38.2
50% Non-Exceedance	97	93	4.12
95% Non-Exceedance	308	381	-23.7
99% Non-Exceedance	925	1010	-9.19
Sept. 10% Non-Exceedance	26.9	27.4	-1.86

Fig. 1: Hydrograph

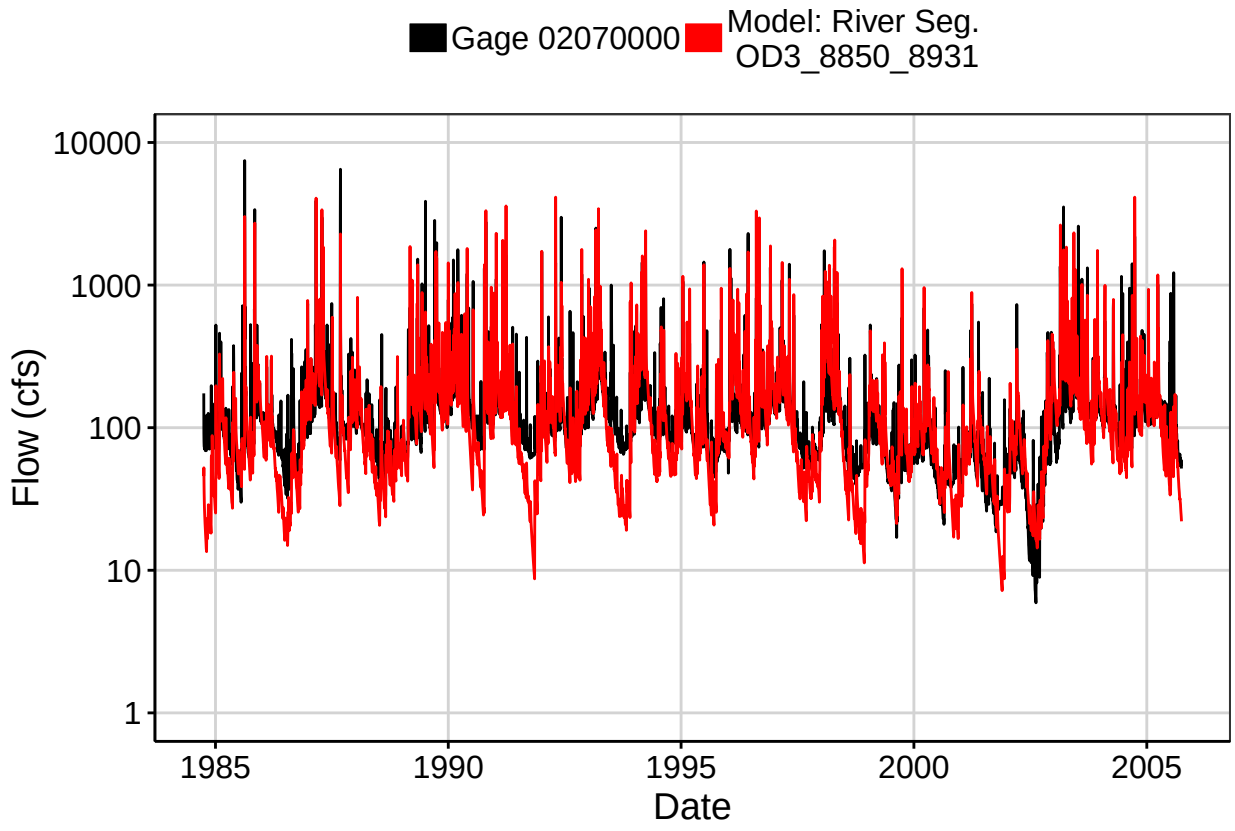


Fig. 2: Zoomed Hydrograph

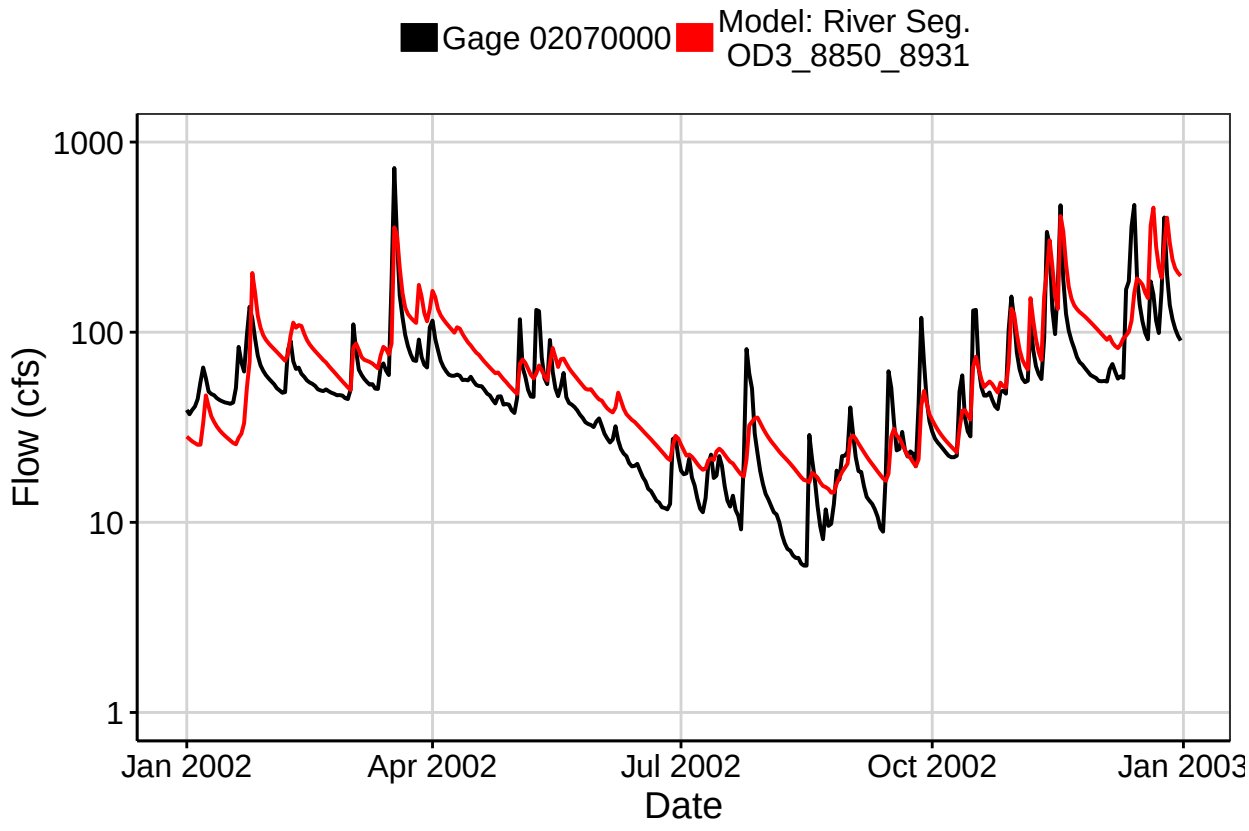


Fig. 3: Flow Exceedance

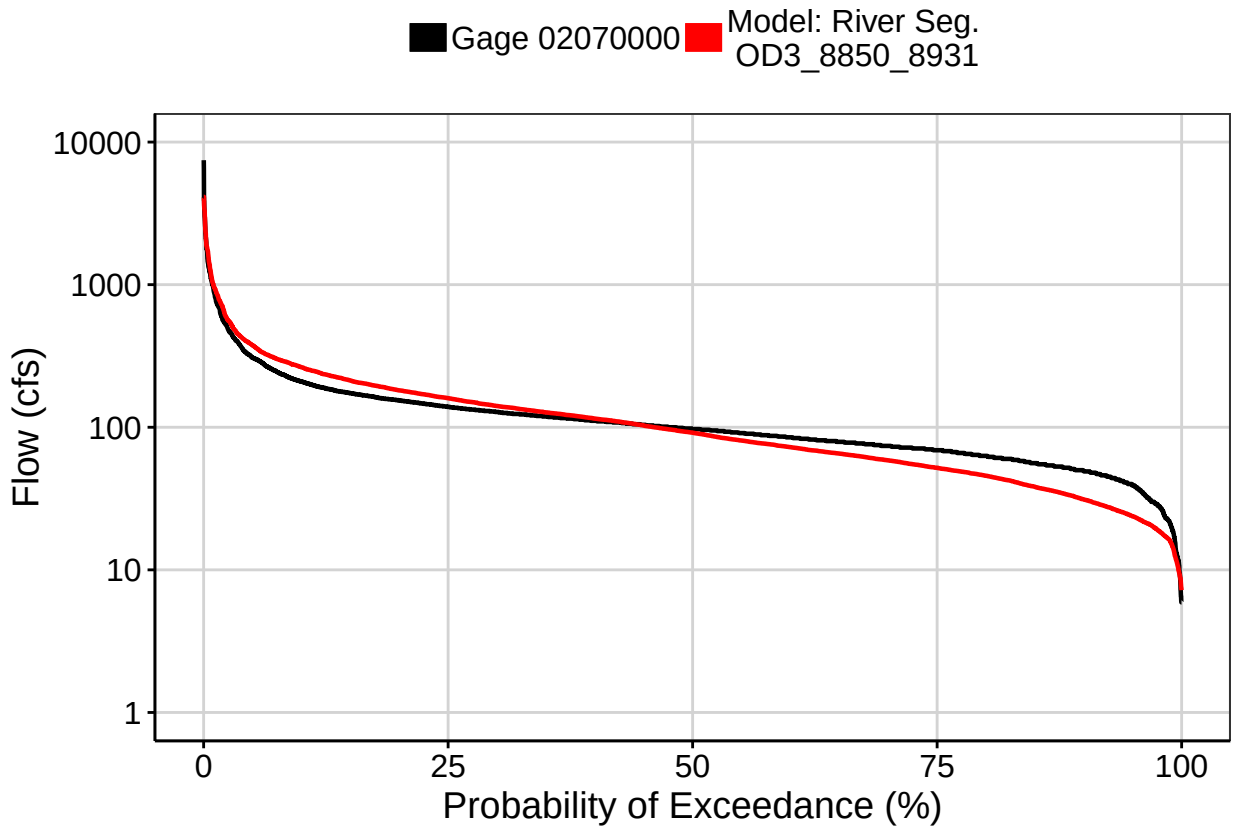


Fig. 4: Baseflow

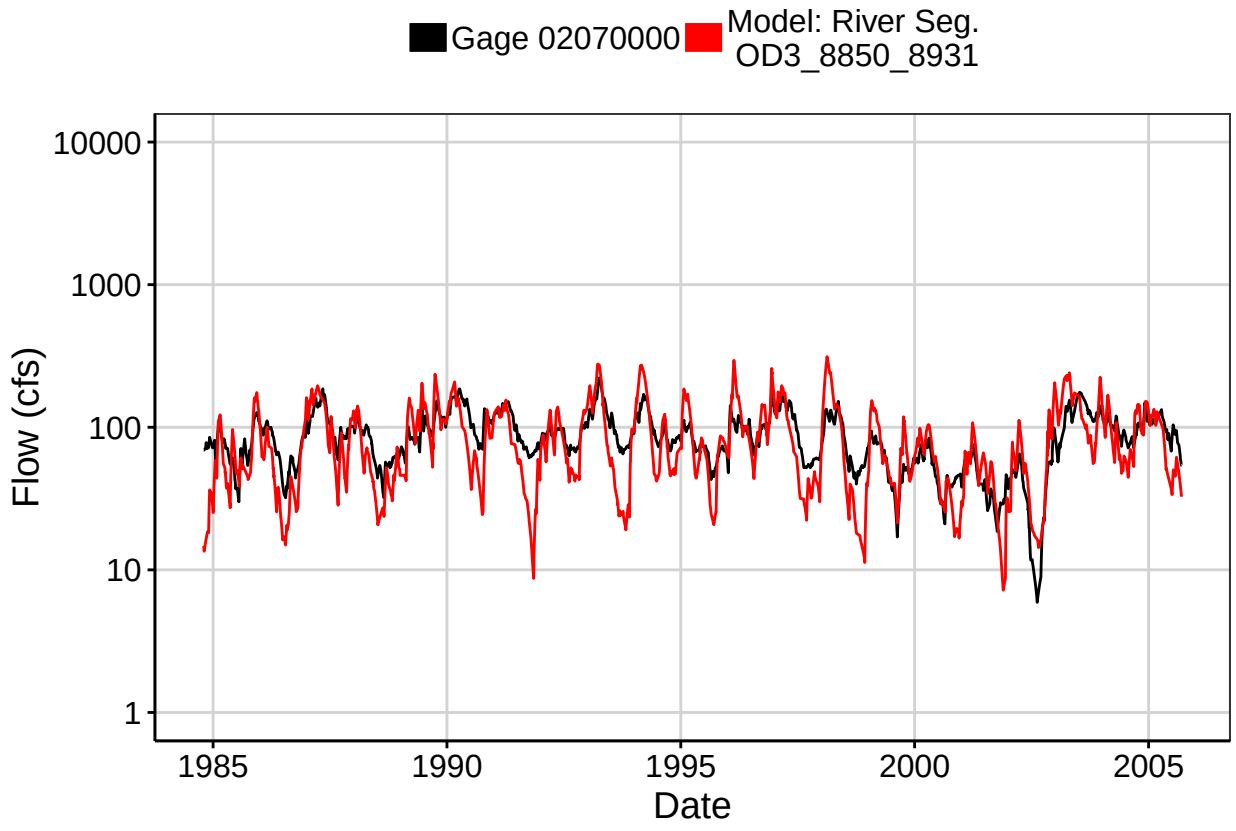


Fig. 5: Combined Baseflow

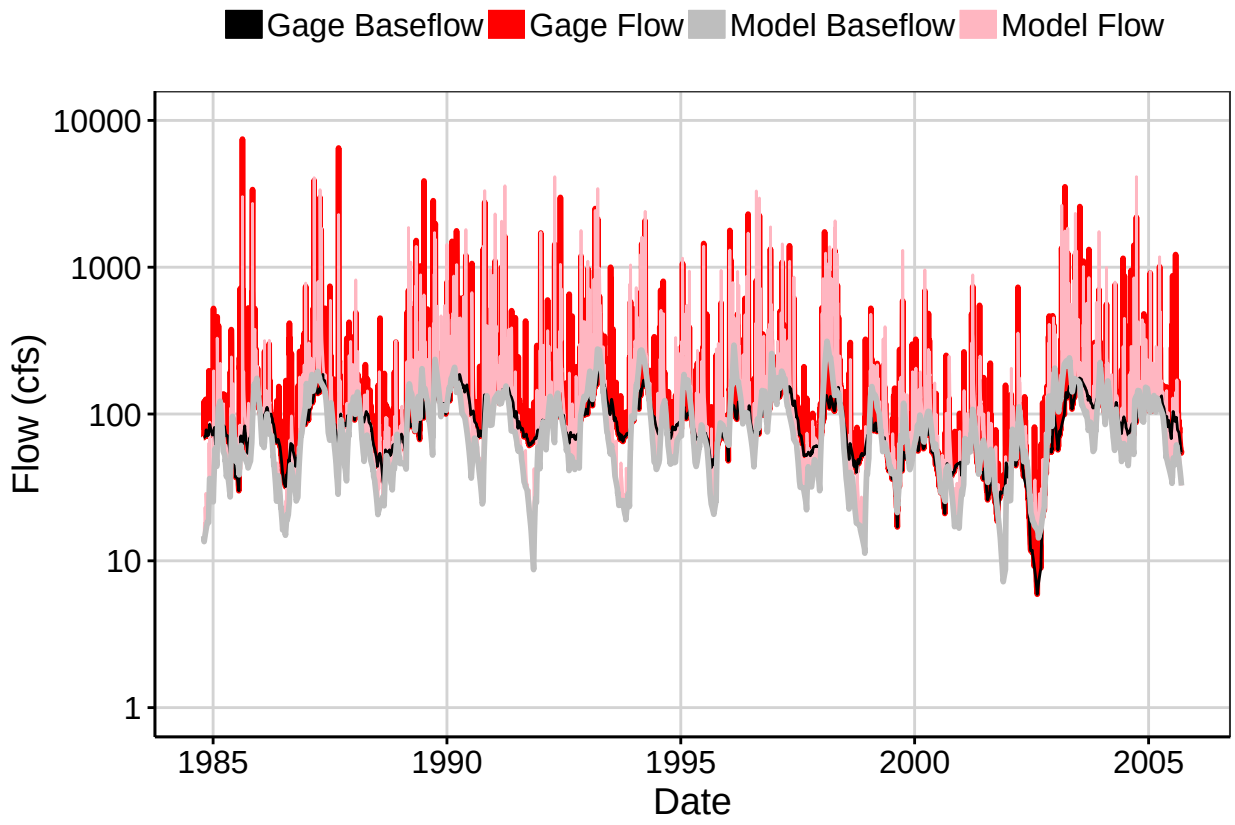


Fig. 6: Largest Error Segment

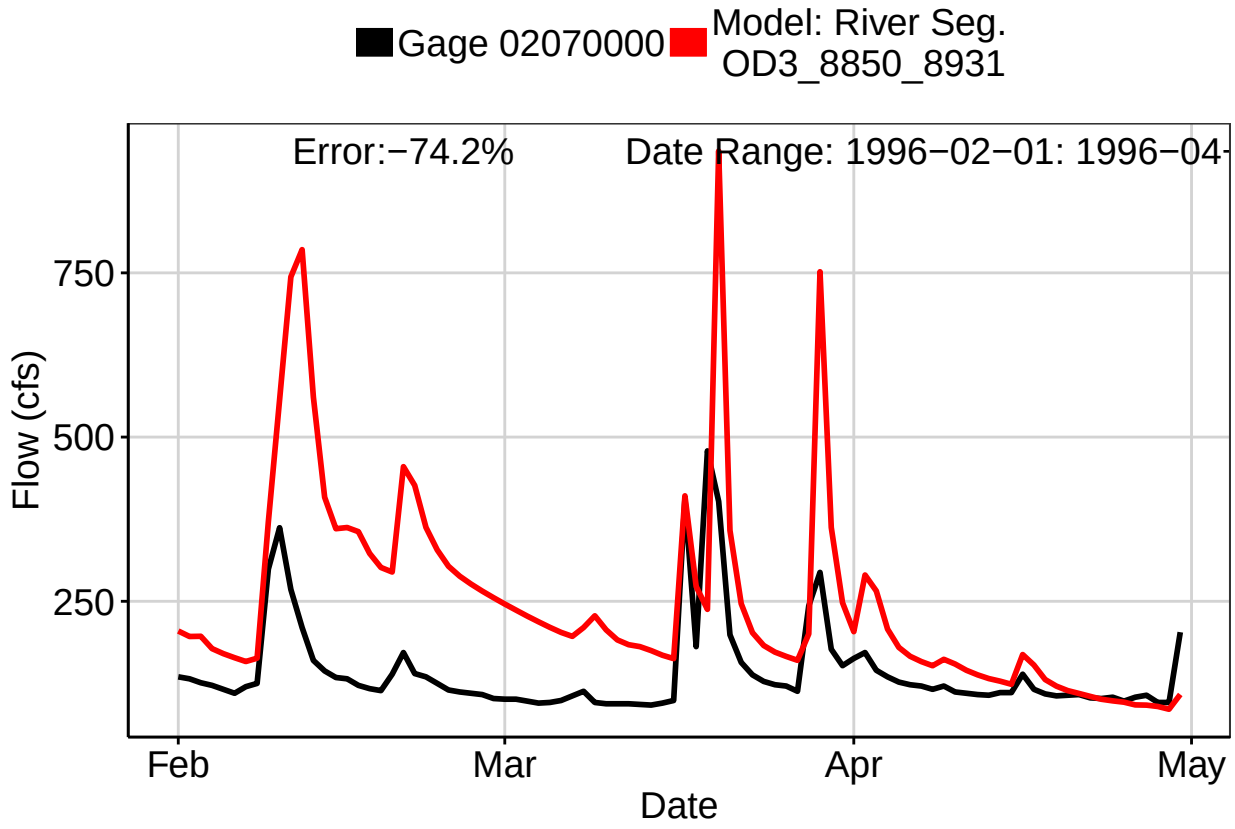


Fig. 7: Second Largest Error Segment

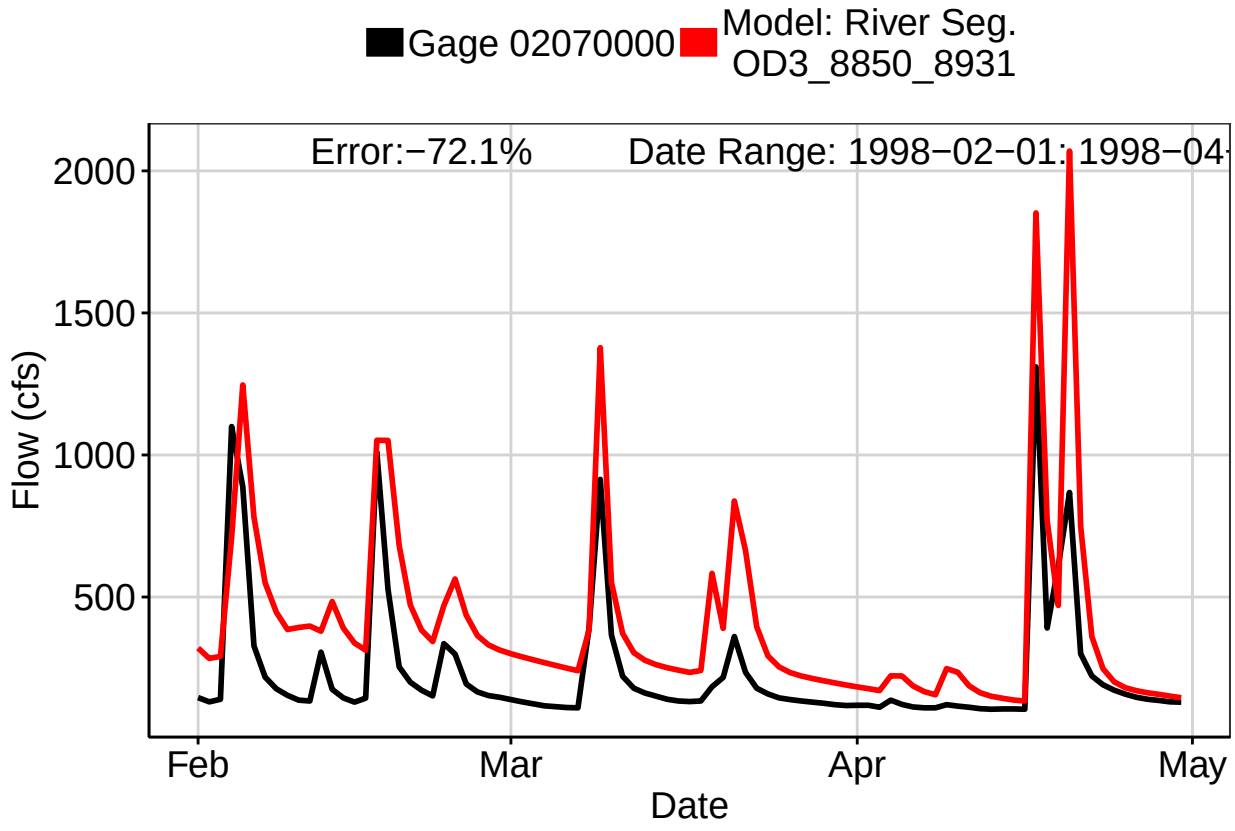


Fig. 8: Third Largest Error Segment

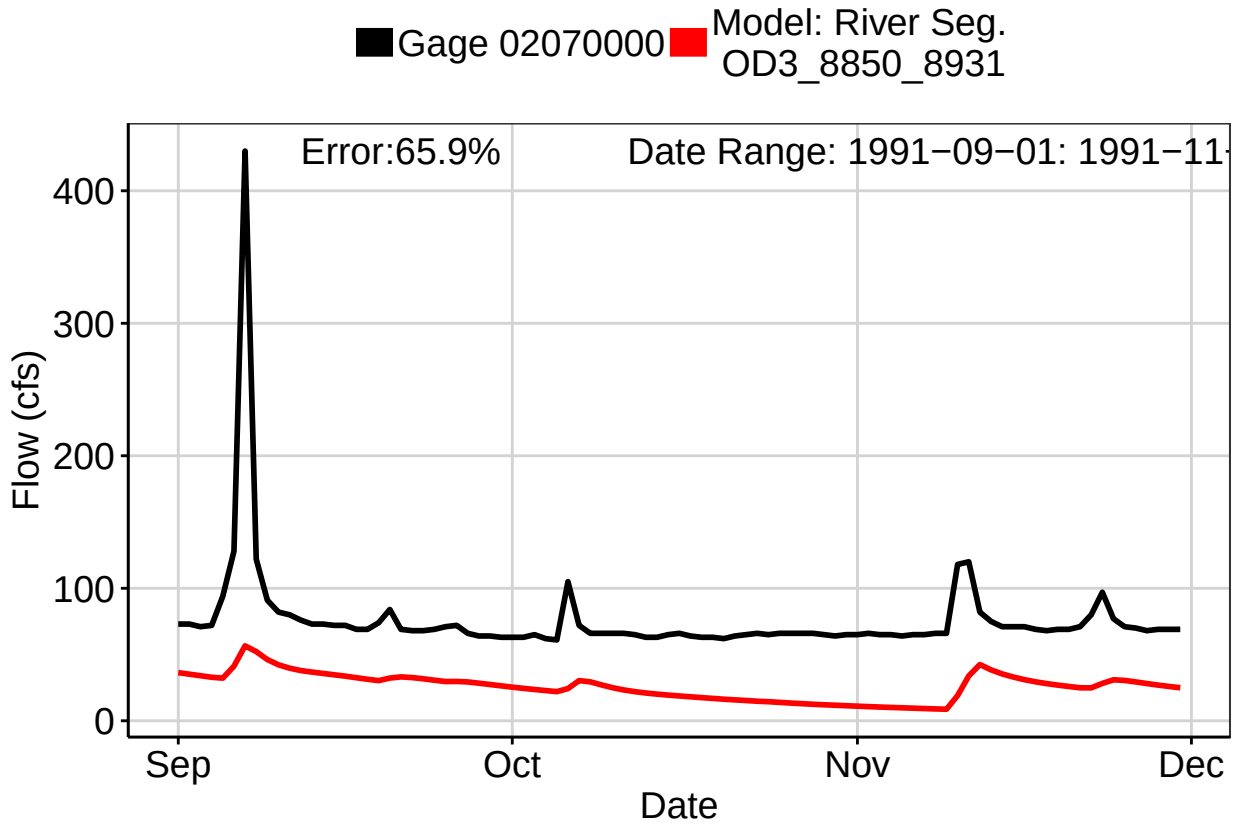


Fig. 9: Residuals Plot