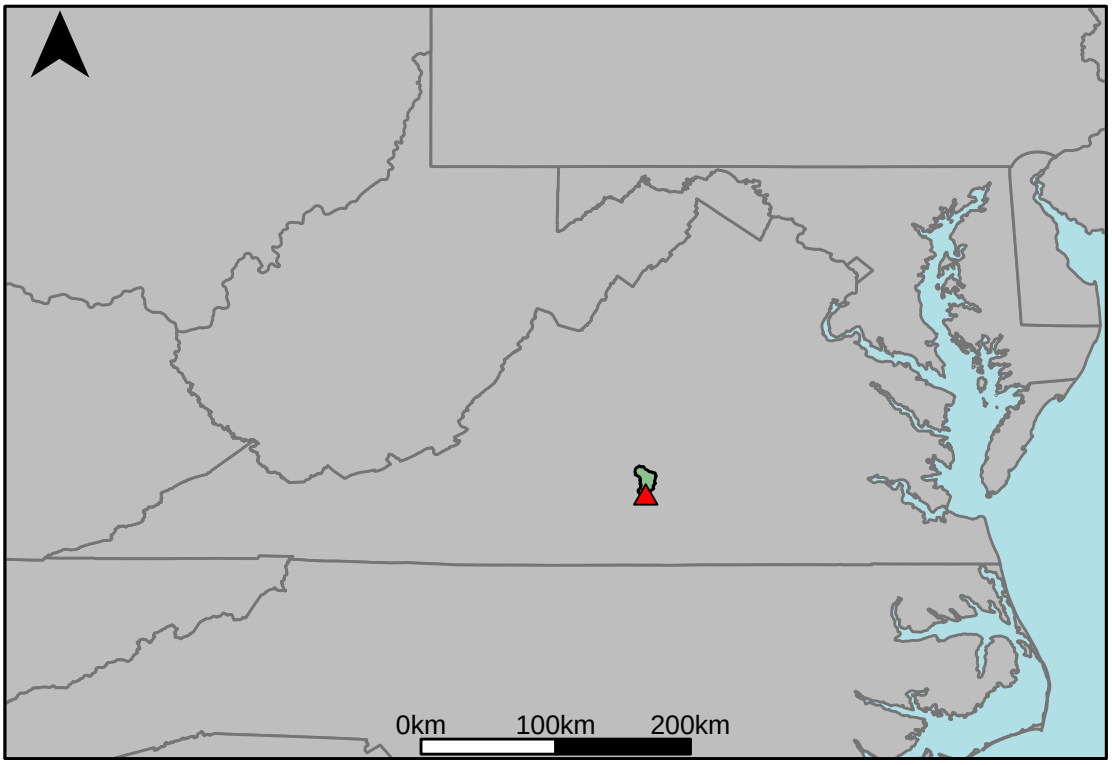
Appendix H.12: USGS Gage 02065500 vs. OR1_7700_7980



This river segment follows part of the flow of the Cub Creek, a tributary of the Roanoke River. The gage is located in Charlotte County, VA (Lat 3704'45", Long 7845'50") approximately 31 miles southeast of Lynchburg, VA. Drainage area is 97.6 sq. miles. This gage started taking data in 1946 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 2.88%, with 59.2% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	30	12.3	-59
Feb. Low Flow	44	21.9	-50.2
Mar. Low Flow	55.2	41.5	-24.8
Apr. Low Flow	62	55	-11.3
May Low Flow	73	82.7	13.3
Jun. Low Flow	77	80.5	4.55
Jul. Low Flow	69.9	61.1	-12.6
Aug. Low Flow	53	39.1	-26.2
Sep. Low Flow	40	27.4	-31.5
Oct. Low Flow	27	17.2	-36.3
Nov. Low Flow	23	14.4	-37.4
Dec. Low Flow	26	11.8	-54.6

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	104	101	-2.88
Jan. Mean Flow	127	127	0
Feb. Mean Flow	139	159	14.4
Mar. Mean Flow	169	198	17.2
Apr. Mean Flow	133	141	6.02
May Mean Flow	108	107	-0.93
Jun. Mean Flow	77.1	72.1	-6.49
Jul. Mean Flow	58.7	44.2	-24.7
Aug. Mean Flow	61.4	39.5	-35.7
Sep. Mean Flow	101	87.8	-13.1
Oct. Mean Flow	61.8	58.2	-5.83
Nov. Mean Flow	105	90.2	-14.1
Dec. Mean Flow	105	93.9	-10.6

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	120	52.4	-56.3
Feb. High Flow	243	262	7.82
Mar. High Flow	277	209	-24.5
Apr. High Flow	339	346	2.06
May High Flow	486	265	-45.5
Jun. High Flow	456	836	83.3
Jul. High Flow	269	388	44.2
Aug. High Flow	195	167	-14.4
Sep. High Flow	123	94.8	-22.9
Oct. High Flow	124	67.7	-45.4
Nov. High Flow	147	49.7	-66.2
Dec. High Flow	70	45.3	-35.3

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	0	2.29	Inf
Med. 1 Day Min	22	9.64	-56.2
Min. 3 Day Min	0.01	2.38	35600
Med. 3 Day Min	23.3	9.83	-57.8
Min. 7 Day Min	0.02	2.53	12500
Med. 7 Day Min	23.9	10.5	-56.1
Min. 30 Day Min	1.82	3.1	70.3
Med. 30 Day Min	28.6	12.2	-57.3
Min. 90 Day Min	7.03	9.02	28.3
Med. 90 Day Min	42.2	23.7	-43.8
7Q10	2.51	3.42	36.3
Year of 90-Day Min. Flow	2002	1986	100
Drought Year Mean	32.9	28	-14.9
Mean Baseflow	59.3	55.4	-6.58

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	6920	5490	-20.7
Med. 1 Day Max	1340	1430	6.72
Max. 3 Day Max	4520	2870	-36.5
Med. 3 Day Max	784	866	10.5
Max. 7 Day Max	2120	1790	-15.6
Med. 7 Day Max	523	473	-9.56
Max. 30 Day Max	611	572	-6.38
Med. 30 Day Max	243	261	7.41
Max. 90 Day Max	341	432	26.7
Med. 90 Day Max	173	176	1.73

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	7.48	4.22	-43.6
5% Non-Exceedance	21.2	9.73	-54.1
50% Non-Exceedance	66	56.5	-14.4
95% Non-Exceedance	261	298	14.2
99% Non-Exceedance	793	827	4.29
Sept. 10% Non-Exceedance	9.64	15	55.6

Fig. 1: Hydrograph

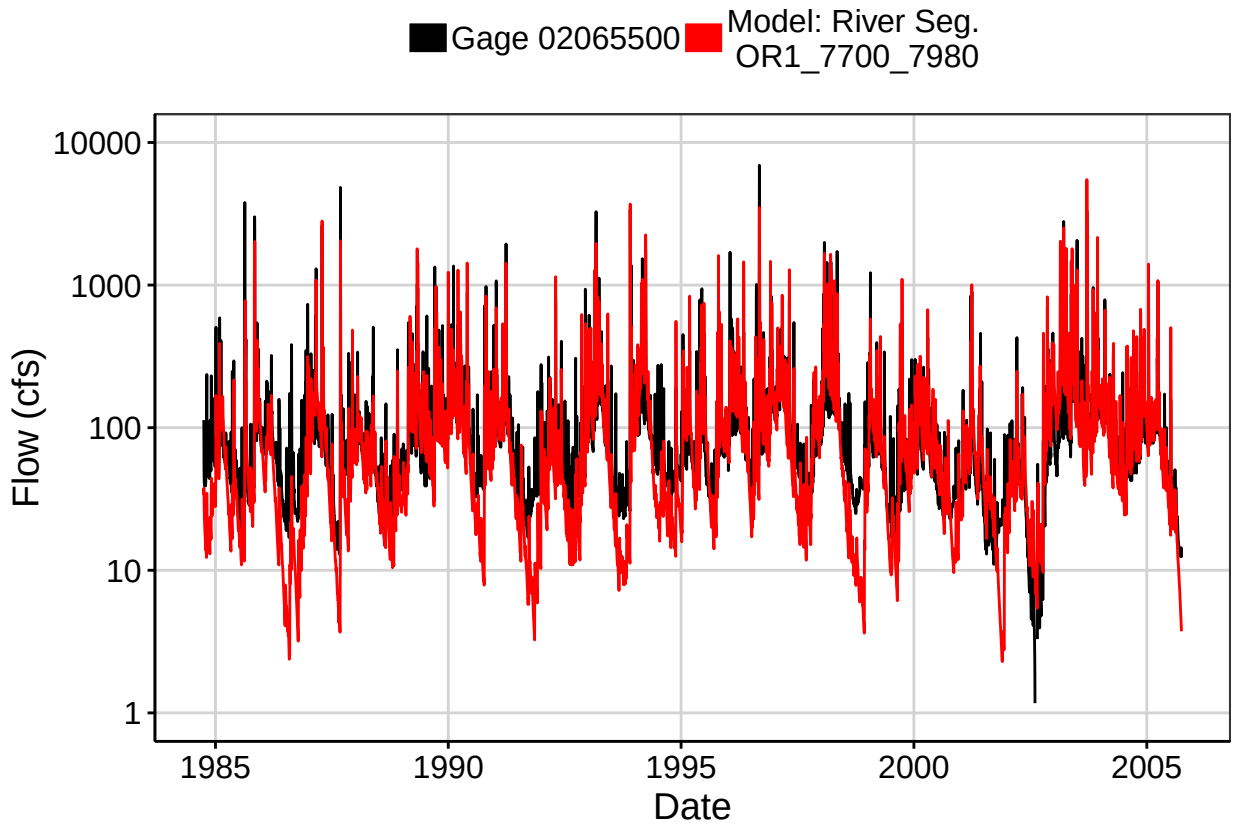


Fig. 2: Zoomed Hydrograph

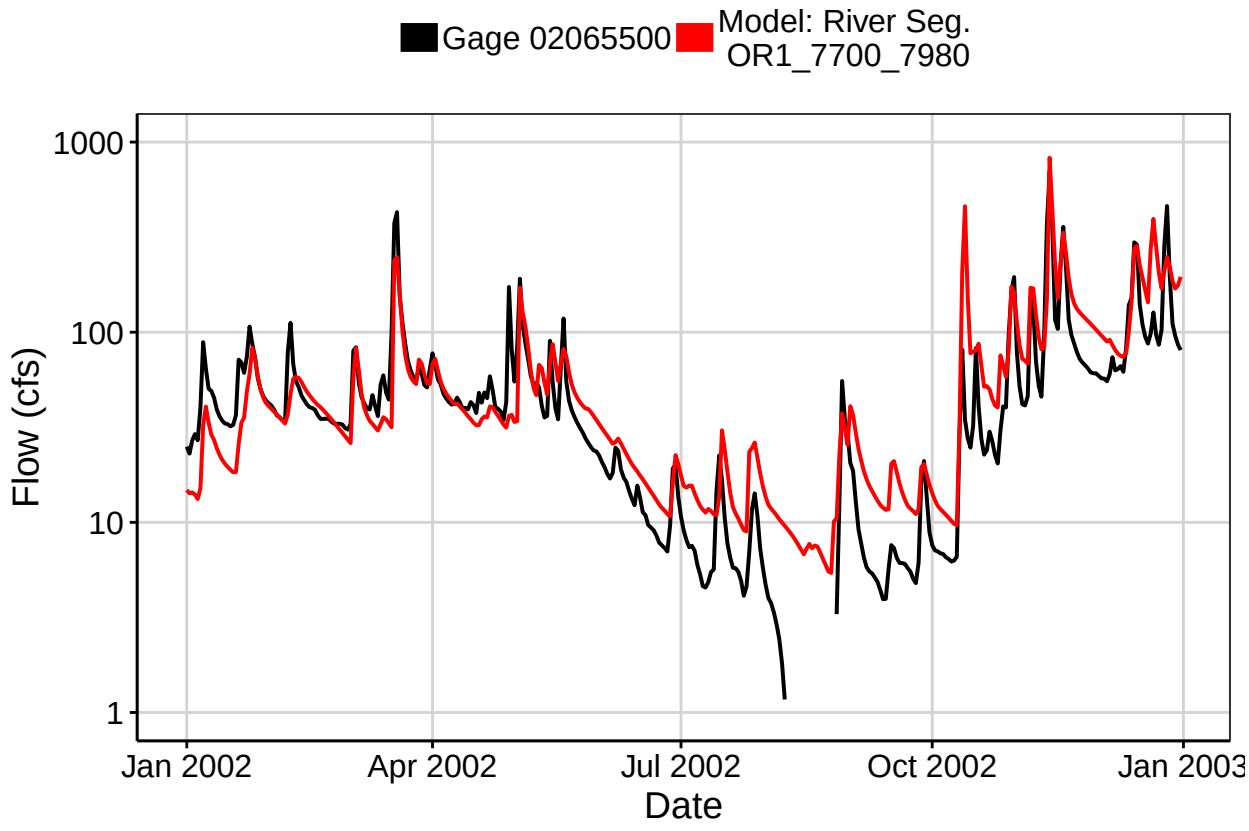


Fig. 3: Flow Exceedance

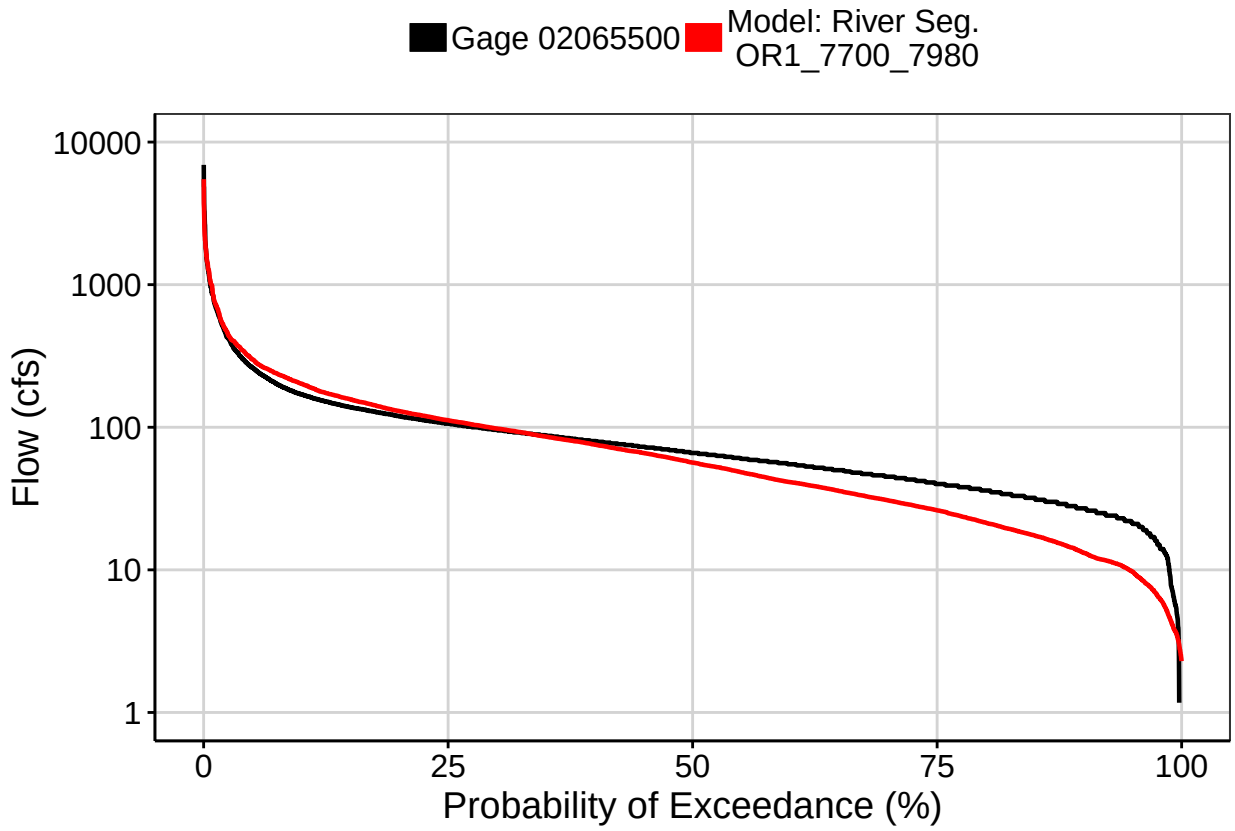


Fig. 4: Baseflow

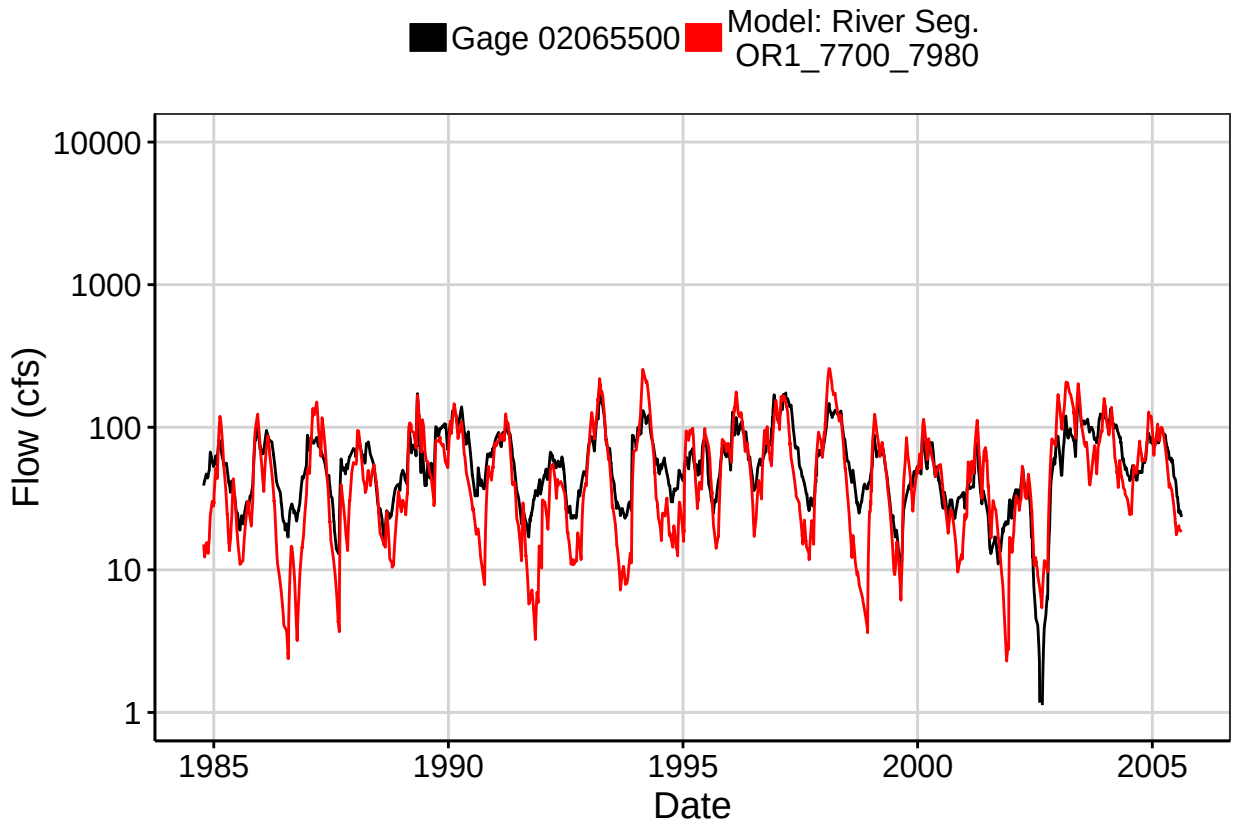


Fig. 5: Combined Baseflow

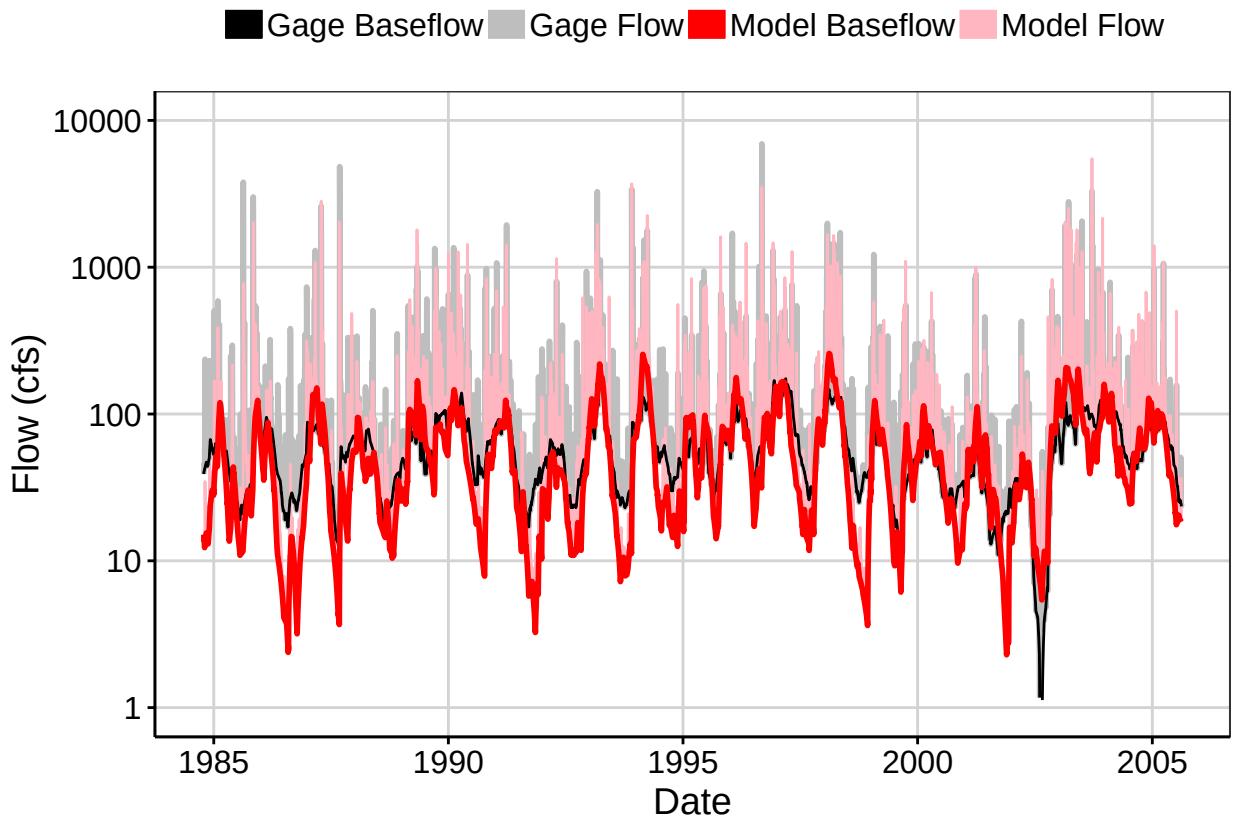


Fig. 6: Largest Error Segment

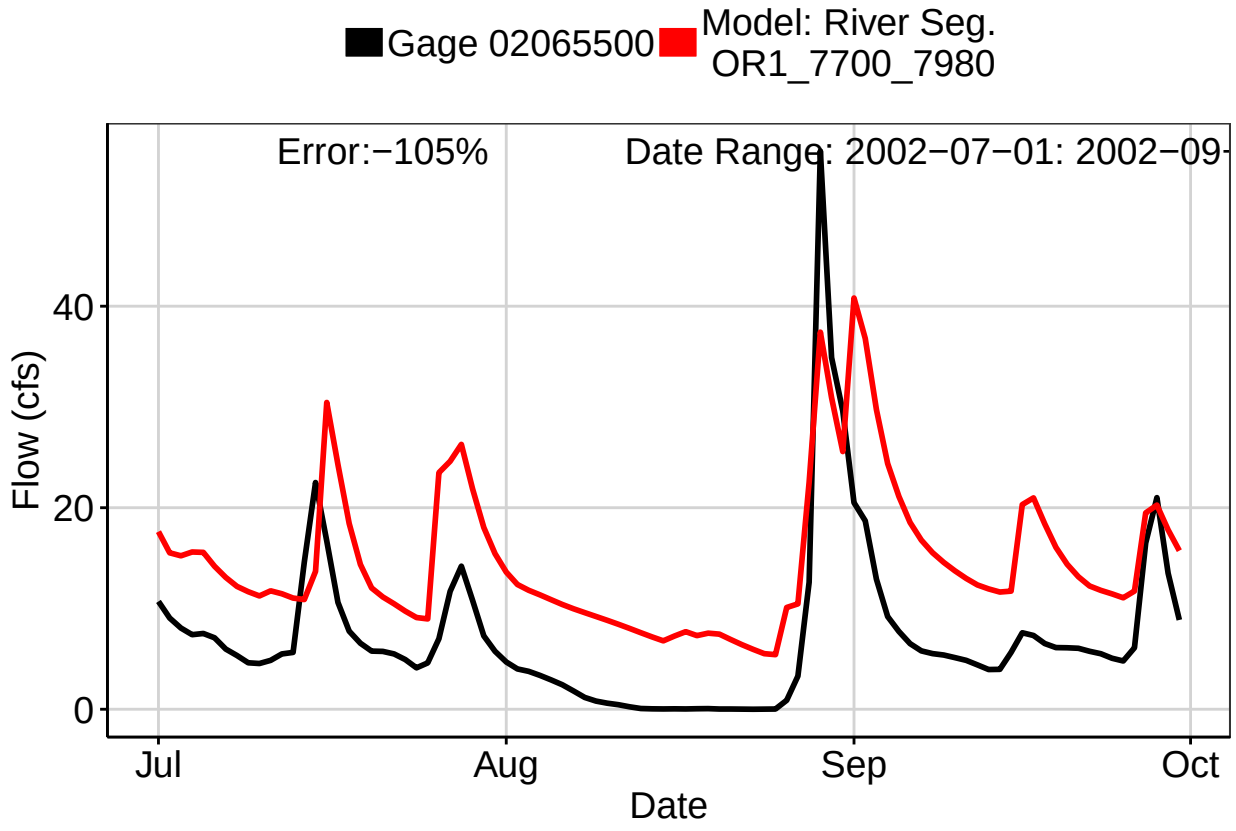


Fig. 7: Second Largest Error Segment

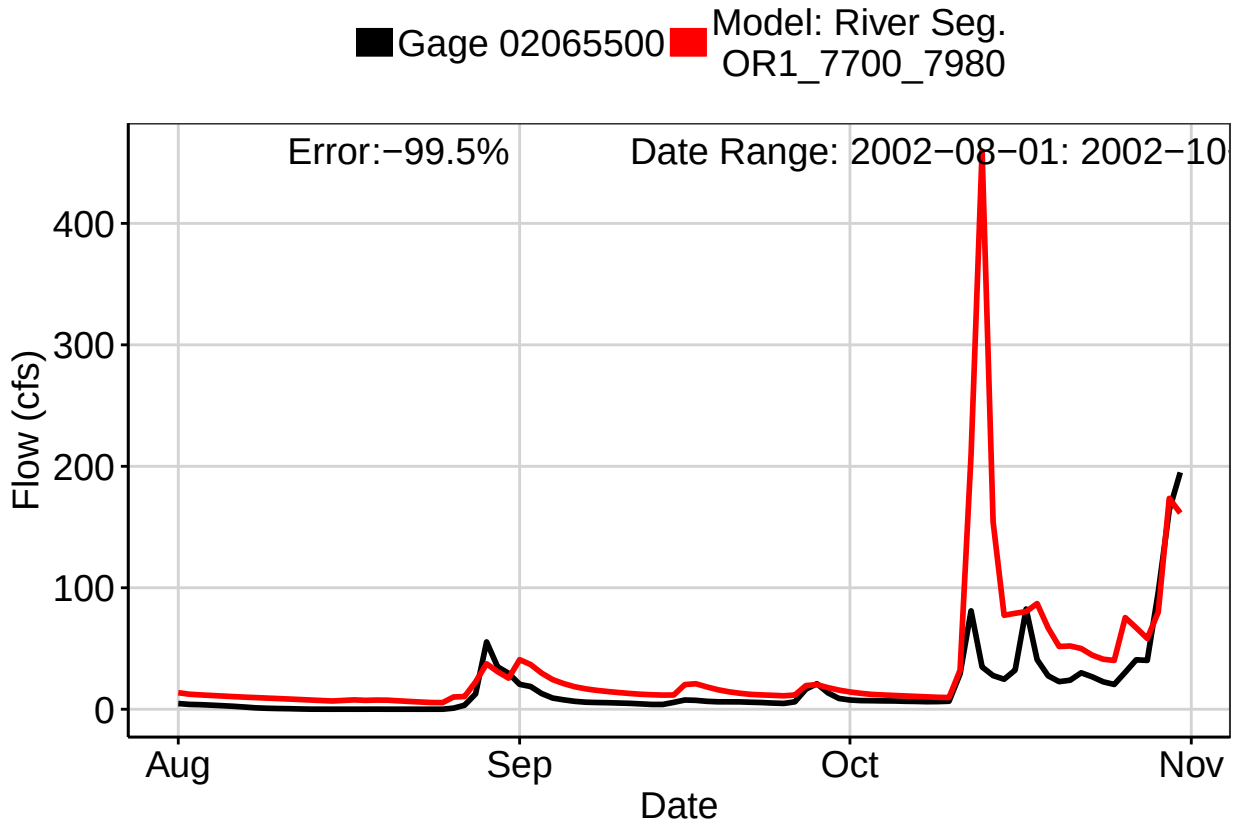


Fig. 8: Third Largest Error Segment

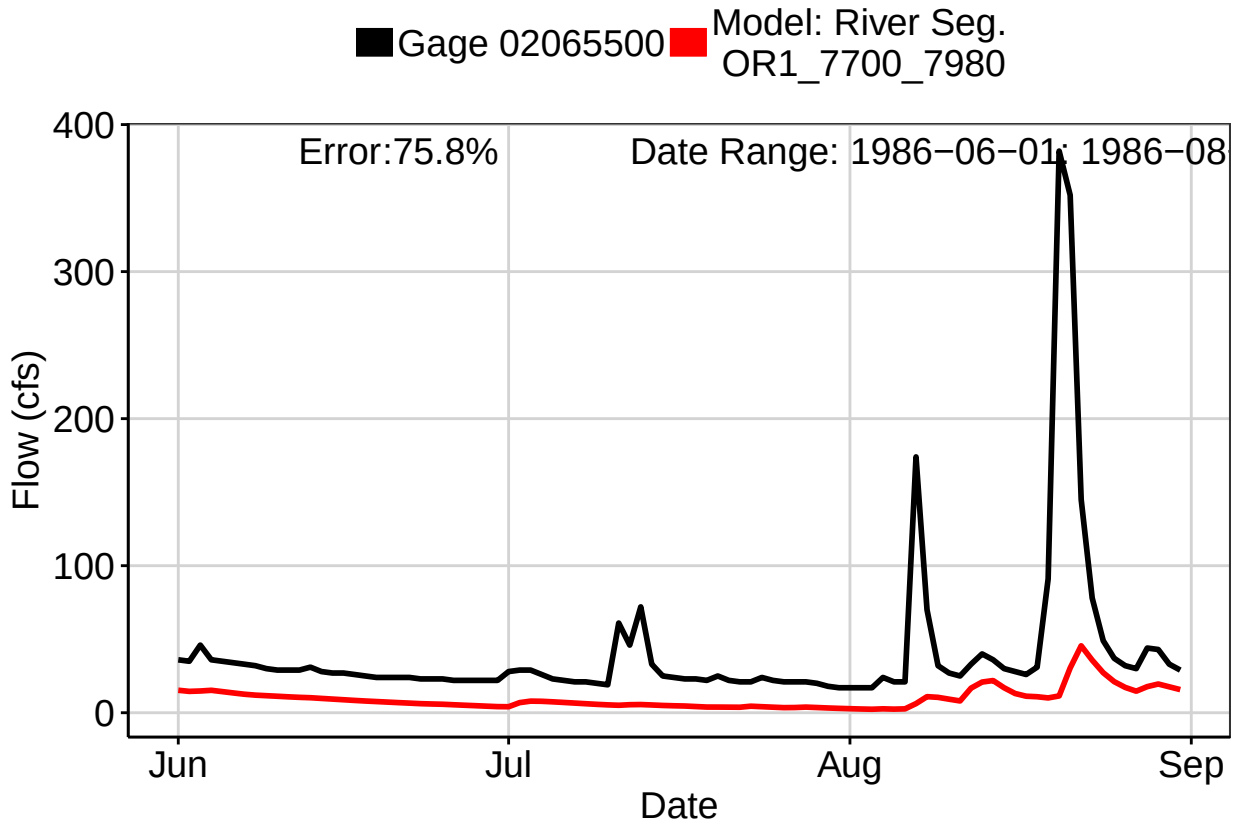


Fig. 9: Residuals Plot