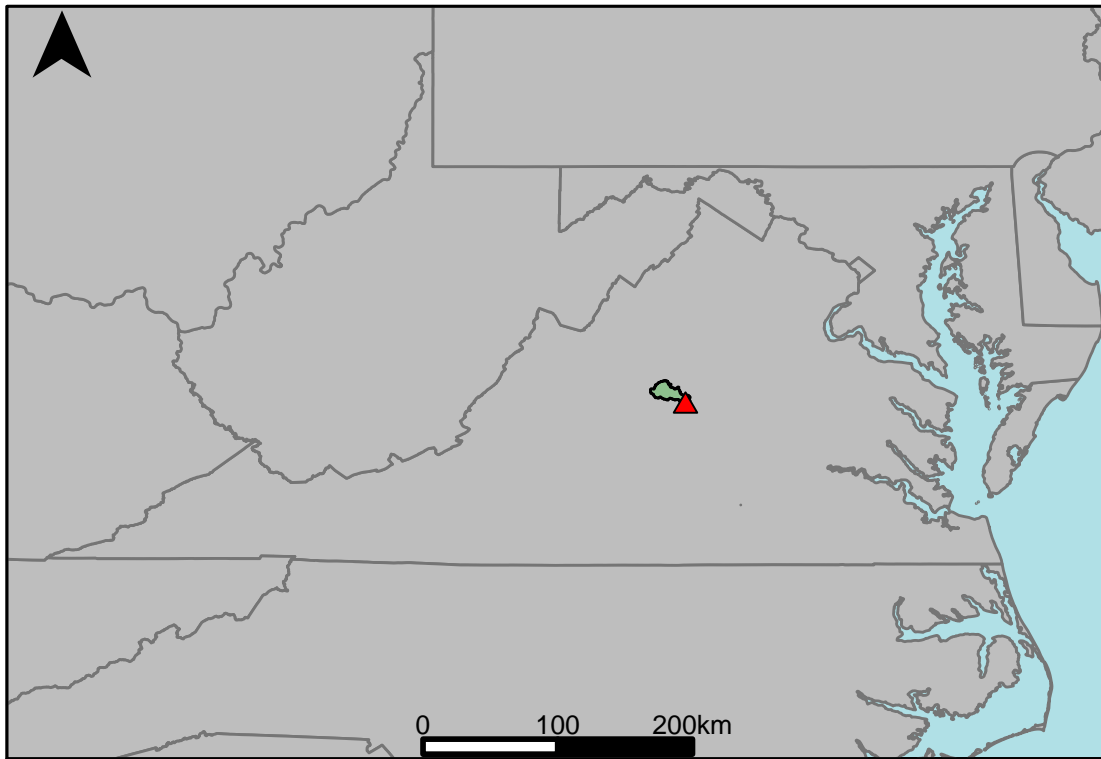


Appendix A.26: USGS Gage 02030000
vs. JL1_6760_6910
Lower James River



This river segment follows part of the flow of the Hardware River, a tributary of the James. The gage is located in Fluvanna County (Lat. $37^{\circ}48'45.5''$, Long. $-78^{\circ}27'20.0''$), approximately 2.1 miles east of Scottsville, VA. Drainage area is 116 sq. miles. This gage started taking data in 1938 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 6.25%, with 52.9% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	31	18.8	-39.4
Feb. Low Flow	45	37.8	-16
Mar. Low Flow	63	53.7	-14.8
Apr. Low Flow	66	77.1	16.8
May Low Flow	86.4	98.2	13.7
Jun. Low Flow	88	85	-3.41
Jul. Low Flow	88.5	59.9	-32.3
Aug. Low Flow	66.6	46.4	-30.3
Sep. Low Flow	41	37.6	-8.29
Oct. Low Flow	33.6	8.79	-73.8
Nov. Low Flow	23	12.2	-47
Dec. Low Flow	21.8	6.25	-71.3

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	128	120	-6.25
Jan. Mean Flow	160	147	-8.12
Feb. Mean Flow	180	179	-0.56
Mar. Mean Flow	217	212	-2.3
Apr. Mean Flow	171	152	-11.1
May Mean Flow	145	125	-13.8
Jun. Mean Flow	96	87.3	-9.06
Jul. Mean Flow	87.4	84.5	-3.32
Aug. Mean Flow	58.2	47.3	-18.7
Sep. Mean Flow	93.3	101	8.25
Oct. Mean Flow	76.5	69.2	-9.54
Nov. Mean Flow	123	123	0
Dec. Mean Flow	130	125	-3.85

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	140	90.2	-35.6
Feb. High Flow	310	266	-14.2
Mar. High Flow	426	307	-27.9
Apr. High Flow	618	301	-51.3
May High Flow	356	277	-22.2
Jun. High Flow	838	472	-43.7
Jul. High Flow	373	251	-32.7
Aug. High Flow	301	186	-38.2
Sep. High Flow	228	157	-31.1
Oct. High Flow	241	164	-32
Nov. High Flow	112	60	-46.4
Dec. High Flow	83	66.5	-19.9

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	0	0.28	Inf
Med. 1 Day Min	15	3.98	-73.5
Min. 3 Day Min	0.01	0.31	4550
Med. 3 Day Min	16.3	4.26	-73.9
Min. 7 Day Min	0.01	0.37	4240
Med. 7 Day Min	17.1	4.97	-70.9
Min. 30 Day Min	0.32	1.37	334
Med. 30 Day Min	24.7	9.79	-60.4
Min. 90 Day Min	1.06	5.76	443
Med. 90 Day Min	47.4	30.3	-36.1
7Q10	1.69	1.26	-25.4
Year of 90-Day Min. Flow	2002	1999	100
Drought Year Mean	17.4	17	-2.3
Mean Baseflow	69.2	68.7	-0.72

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	6510	9220	41.6
Med. 1 Day Max	1870	2370	26.7
Max. 3 Day Max	2820	3860	36.9
Med. 3 Day Max	947	1250	32
Max. 7 Day Max	1590	2050	28.9
Med. 7 Day Max	558	714	28
Max. 30 Day Max	804	686	-14.7
Med. 30 Day Max	303	281	-7.26
Max. 90 Day Max	542	485	-10.5
Med. 90 Day Max	206	200	-2.91

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	1.62	2.01	24.1
5% Non-Exceedance	12.2	5.42	-55.6
50% Non-Exceedance	80	74.5	-6.88
95% Non-Exceedance	358	335	-6.42
99% Non-Exceedance	960	934	-2.71
Sept. 10% Non-Exceedance	8.44	5	-40.8

Fig. 1: Hydrograph

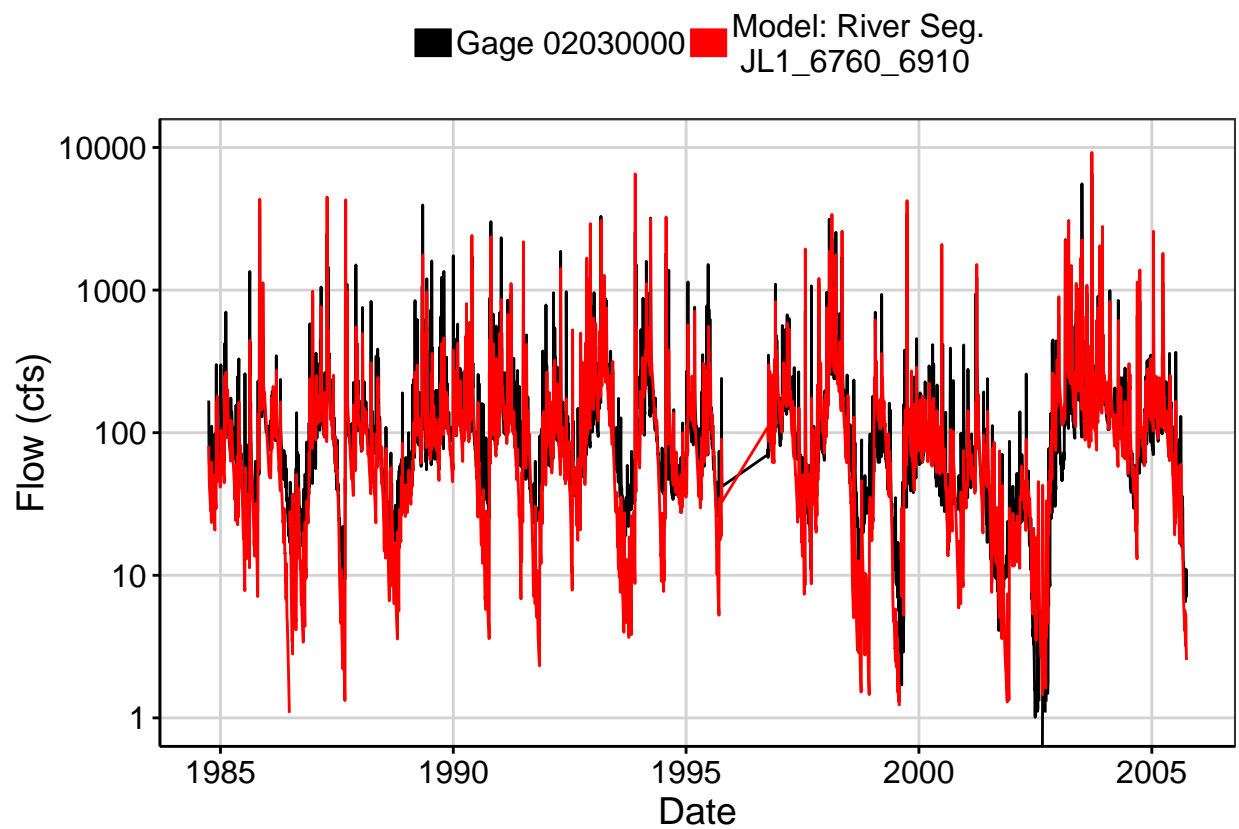


Fig. 2: Zoomed Hydrograph

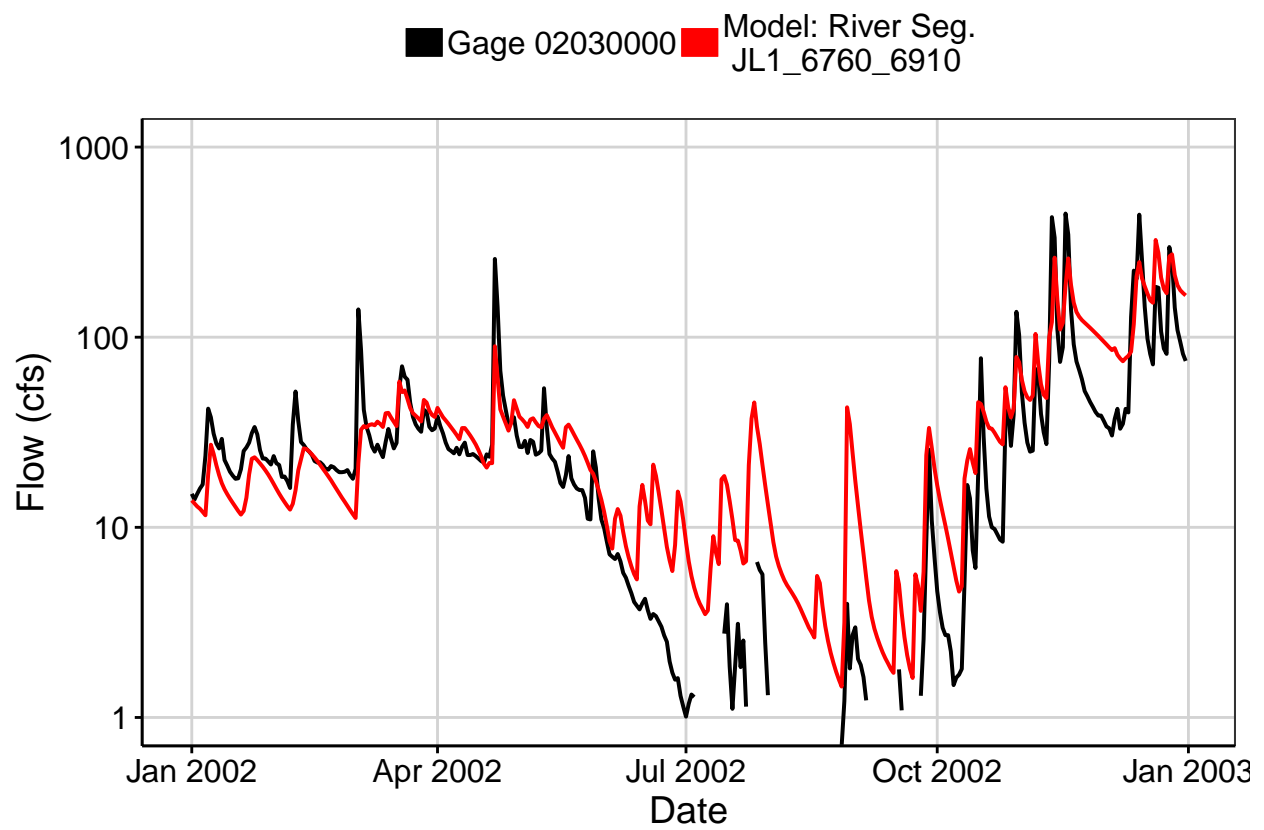


Fig. 3: Flow Exceedance

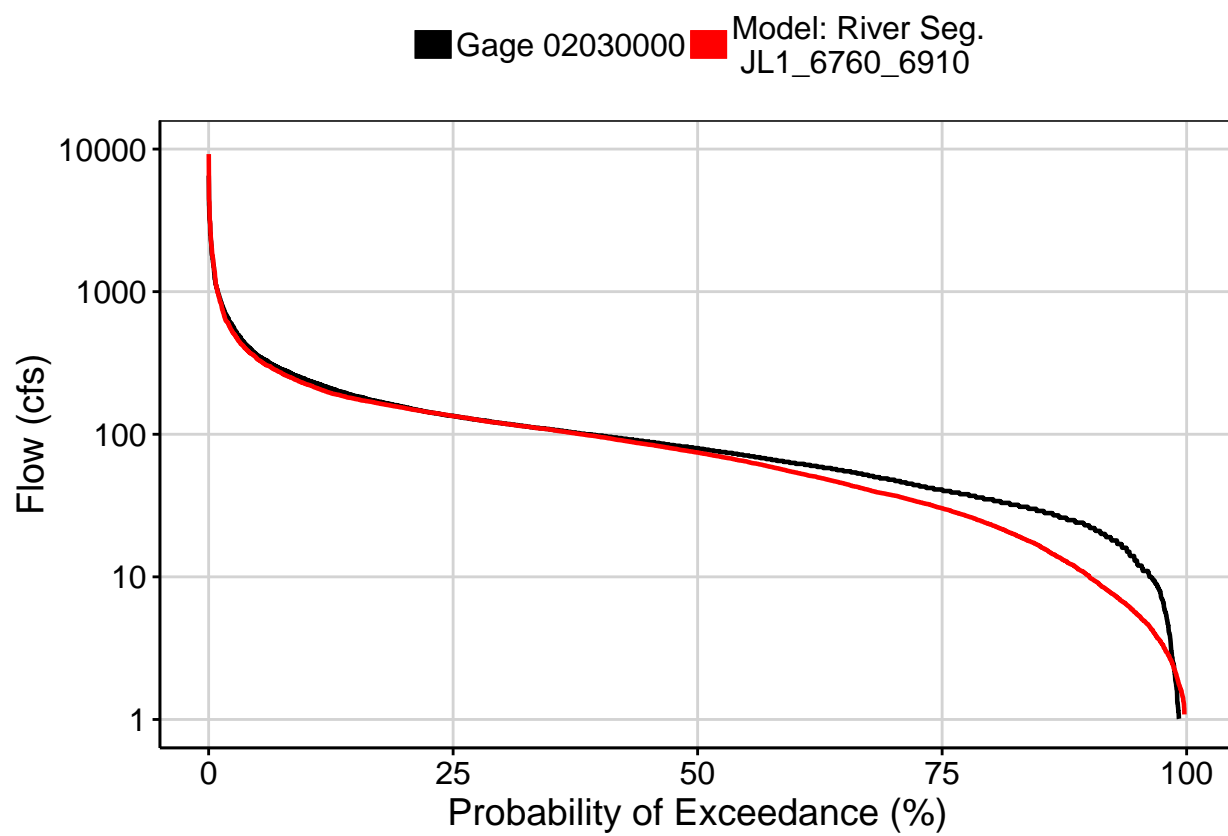


Fig. 4: Baseflow

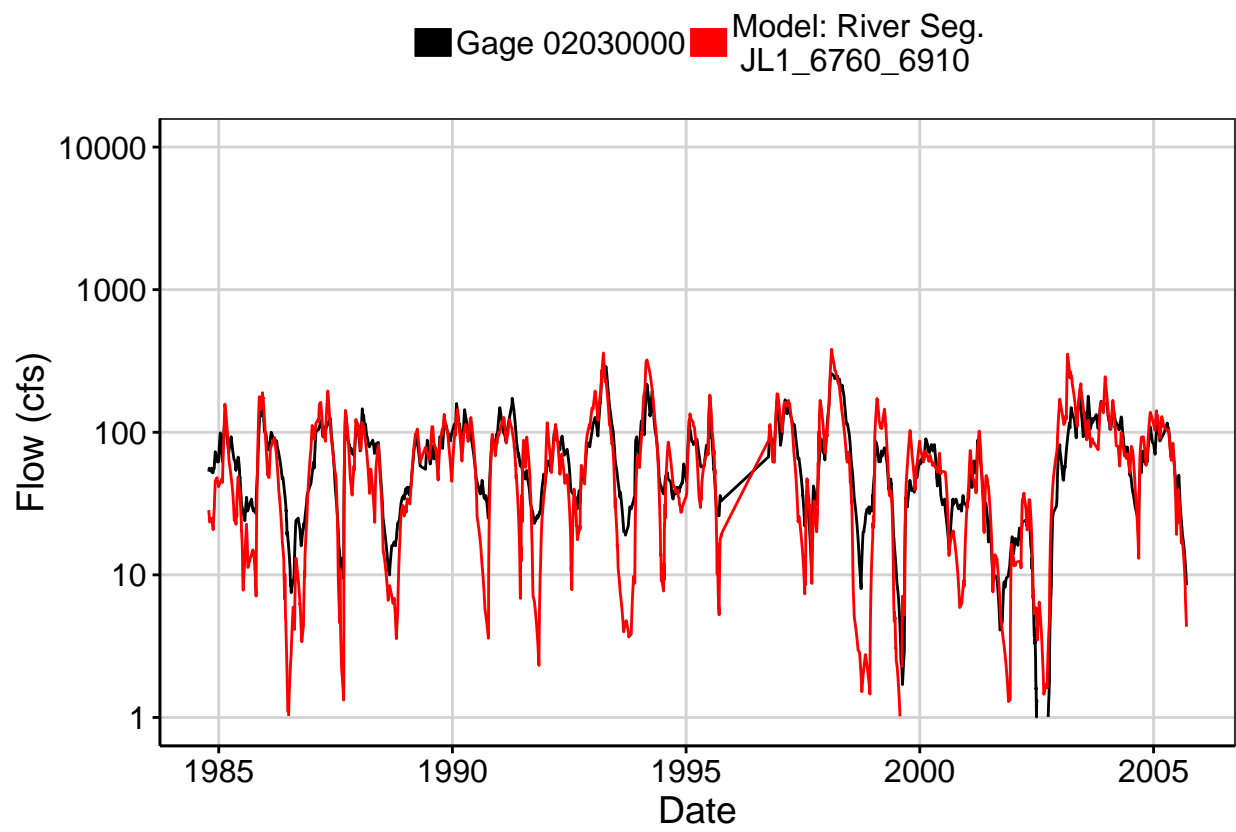


Fig. 5: Combined Baseflow

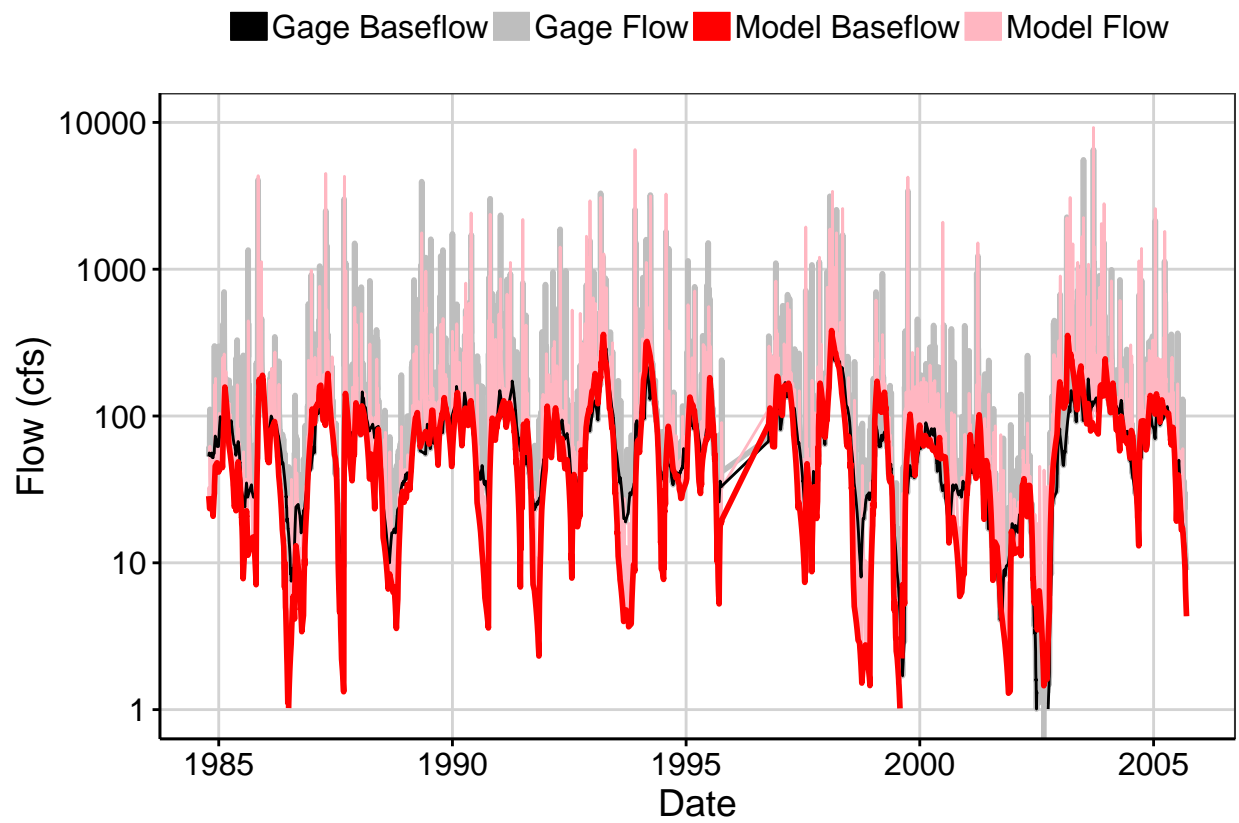


Fig. 6: Largest Error Segment

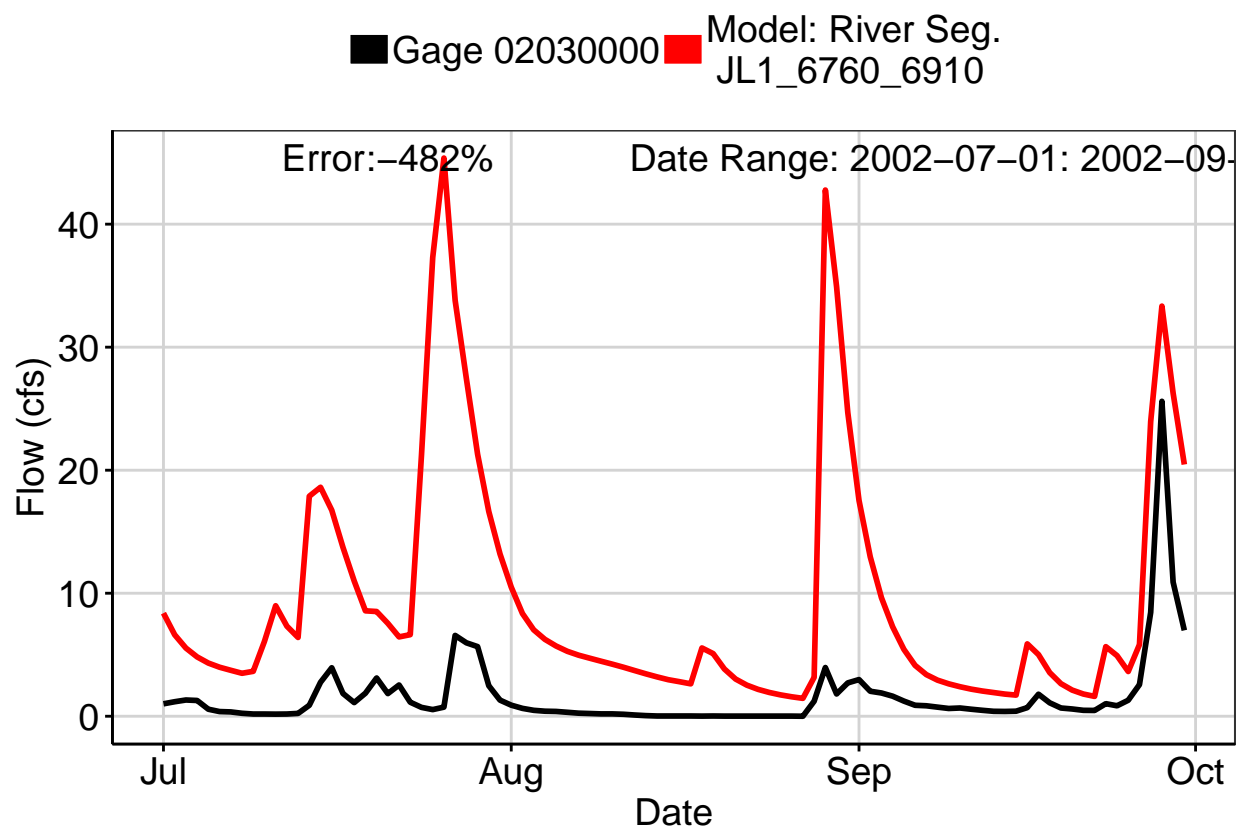


Fig. 7: Second Largest Error Segment

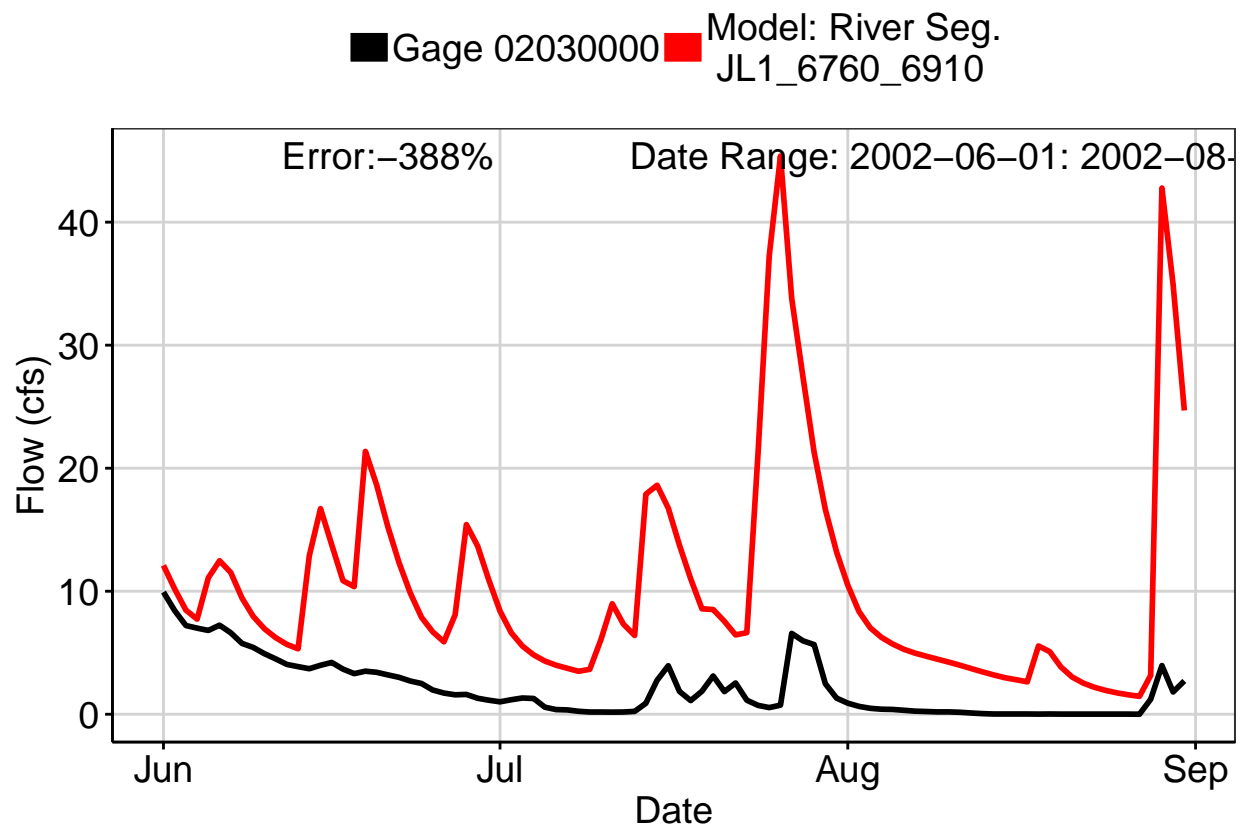


Fig. 8: Third Largest Error Segment

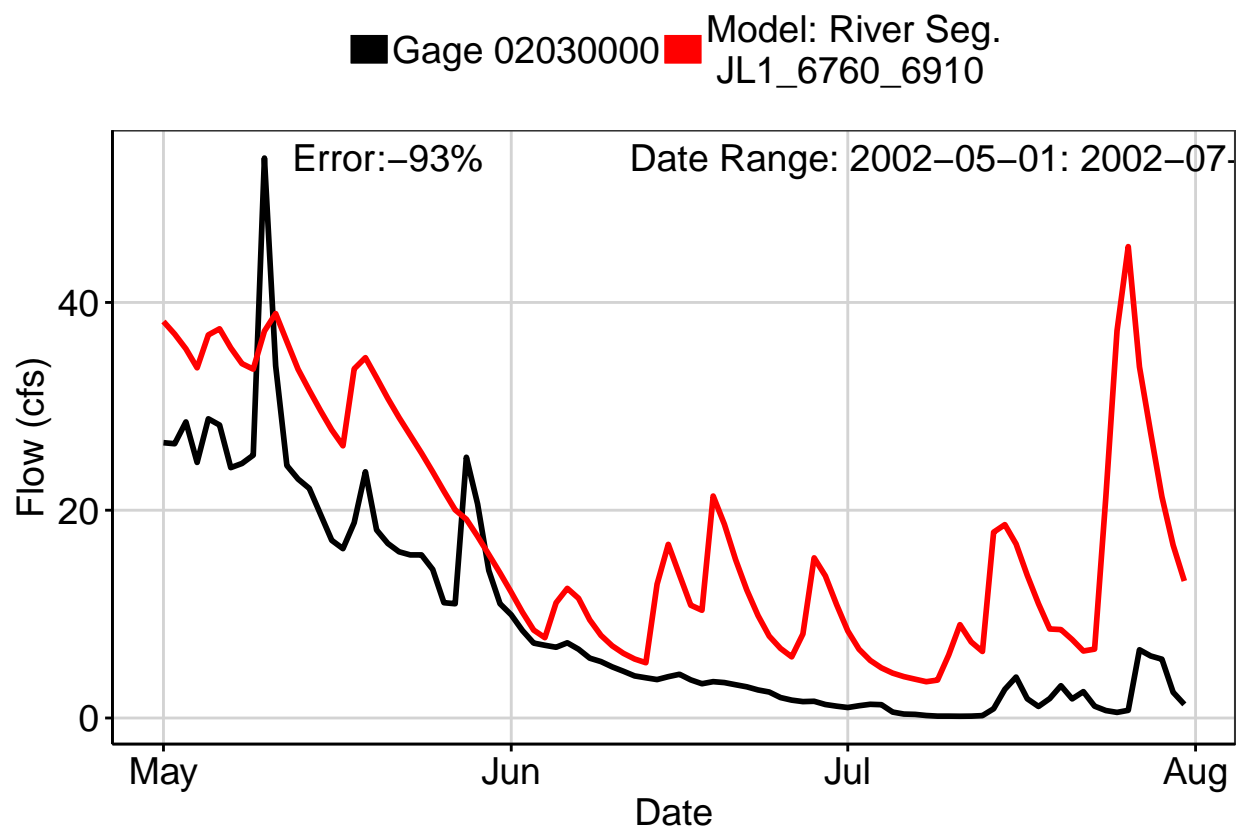


Fig. 9: Residuals Plot

