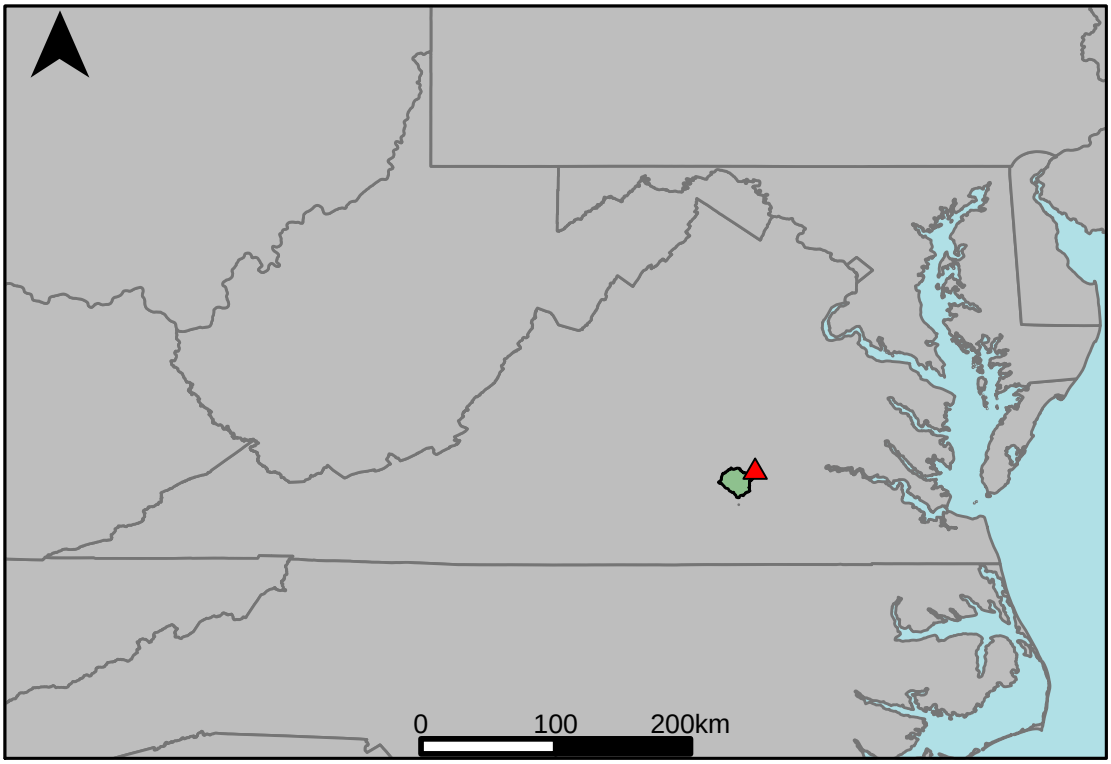
Appendix A.37: USGS Gage 02041000 vs. JA1_7600_7570 Appomattox River



This river segment follows part of the flow of the Deep Creek, a tributary of the James. The gage is located in Amelia County (Lat. 37°16'59.5", Long. -77°52'12.0"), approximately 15 northeast of Blackstone, VA. Drainage area is 158 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 0%, with 41.7% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	12	7.08	-41
Feb. Low Flow	36	23.6	-34.4
Mar. Low Flow	48	31.8	-33.8
Apr. Low Flow	63	54	-14.3
May Low Flow	98	109	11.2
Jun. Low Flow	92	90.4	-1.74
Jul. Low Flow	77	49.1	-36.2
Aug. Low Flow	39	31.7	-18.7
Sep. Low Flow	23	19.4	-15.7
Oct. Low Flow	13	10.6	-18.5
Nov. Low Flow	11	11.5	4.55
Dec. Low Flow	4.3	8.26	92.1

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	144	144	0
Jan. Mean Flow	203	193	-4.93
Feb. Mean Flow	217	250	15.2
Mar. Mean Flow	290	314	8.28
Apr. Mean Flow	207	205	-0.97
May Mean Flow	145	130	-10.3
Jun. Mean Flow	82.3	74.1	-9.96
Jul. Mean Flow	54.5	51.4	-5.69
Aug. Mean Flow	69.6	67.7	-2.73
Sep. Mean Flow	110	119	8.18
Oct. Mean Flow	56.2	61.7	9.79
Nov. Mean Flow	150	137	-8.67
Dec. Mean Flow	149	133	-10.7

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	118	103	-12.7
Feb. High Flow	464	337	-27.4
Mar. High Flow	333	298	-10.5
Apr. High Flow	680	616	-9.41
May High Flow	676	653	-3.4
Jun. High Flow	1380	1370	-0.72
Jul. High Flow	624	546	-12.5
Aug. High Flow	379	347	-8.44
Sep. High Flow	192	93.7	-51.2
Oct. High Flow	131	117	-10.7
Nov. High Flow	111	111	0
Dec. High Flow	55	110	100

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	0.00	3.80e-01	Inf
Med. 1 Day Min	3.90	4.06	4.10
Min. 3 Day Min	0.00	3.90e-01	-5.84e+15
Med. 3 Day Min	4.07	4.55	1.18e+01
Min. 7 Day Min	6.00e-02	4.20e-01	5.97e+02
Med. 7 Day Min	4.36	5.62	2.89e+01
Min. 30 Day Min	4.40e-01	1.30	1.93e+02
Med. 30 Day Min	7.82	1.28e+01	6.37e+01
Min. 90 Day Min	1.16	7.47	5.44e+02
Med. 90 Day Min	3.22e+01	2.61e+01	-1.89e+01
7Q10	5.90e-01	1.16	9.73e+01
Year of 90-Day Min. Flow	2.00e+03	2.00e+03	0.00
Drought Year Mean	3.05e+01	3.17e+01	3.93
Mean Baseflow	5.64e+01	5.99e+01	6.21

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	8320	14300	71.9
Med. 1 Day Max	2670	3220	20.6
Max. 3 Day Max	5870	5550	-5.45
Med. 3 Day Max	1880	1720	-8.51
Max. 7 Day Max	2850	3180	11.6
Med. 7 Day Max	981	903	-7.95
Max. 30 Day Max	1040	864	-16.9
Med. 30 Day Max	436	435	-0.23
Max. 90 Day Max	676	619	-8.43
Med. 90 Day Max	259	260	0.39

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	0.9	2.06	129
5% Non-Exceedance	4.5	6.4	42.2
50% Non-Exceedance	70	64.5	-7.86
95% Non-Exceedance	451	445	-1.33
99% Non-Exceedance	1470	1520	3.4
Sept. 10% Non-Exceedance	2.85	6.77	138

Fig. 1: Hydrograph

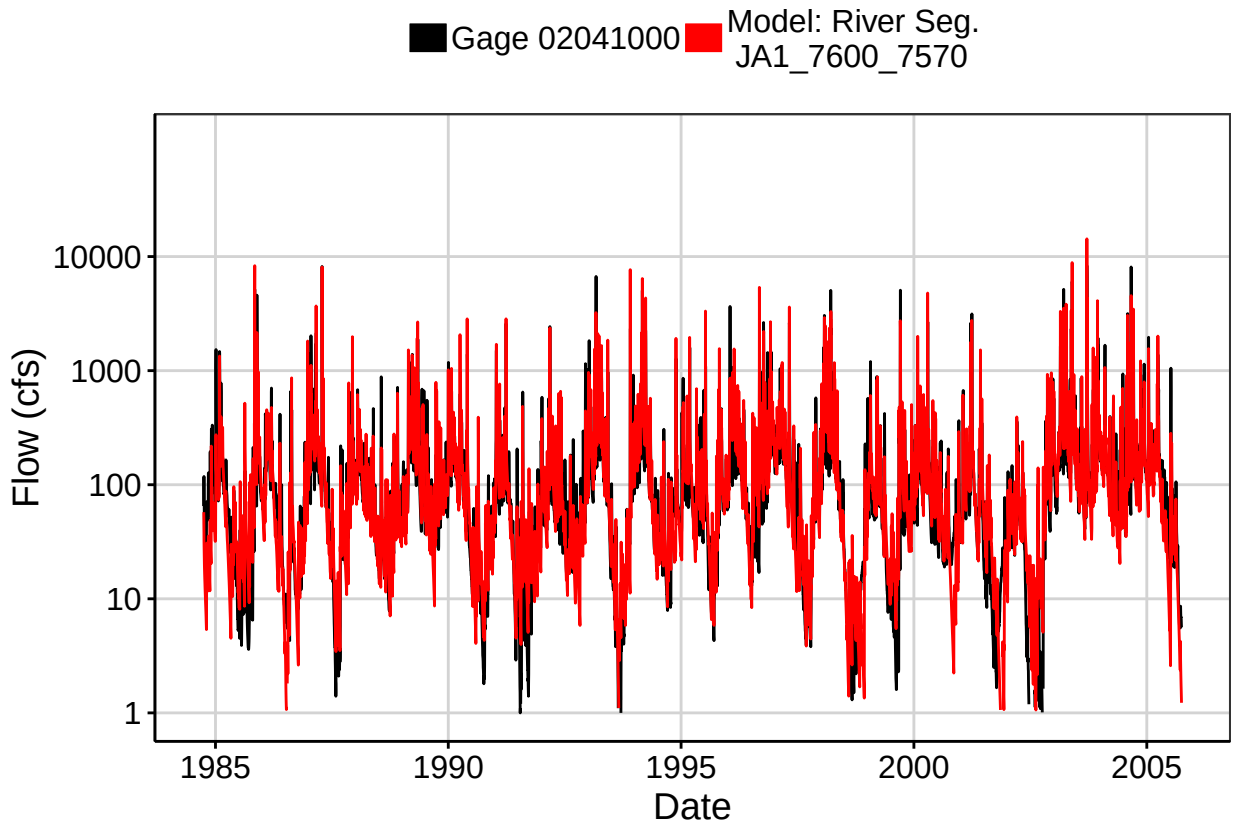


Fig. 2: Zoomed Hydrograph

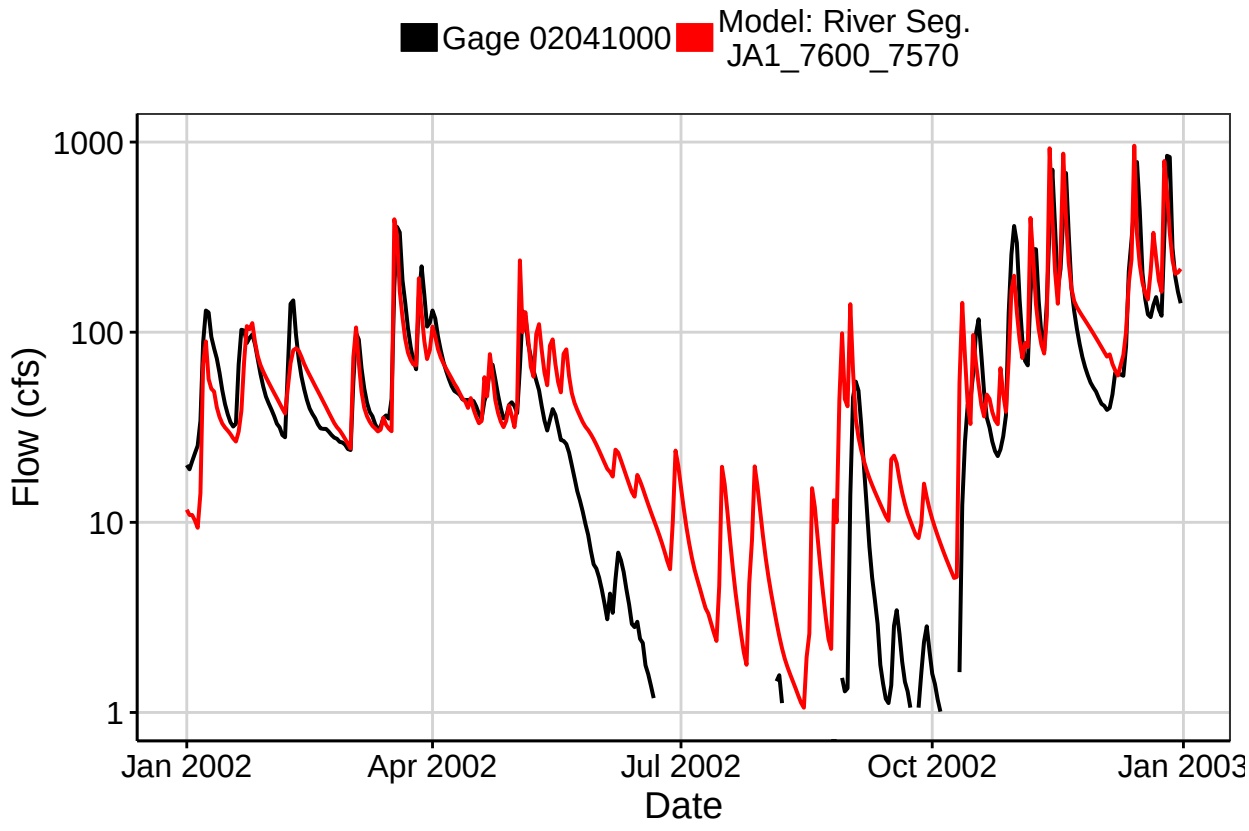


Fig. 3: Flow Exceedance

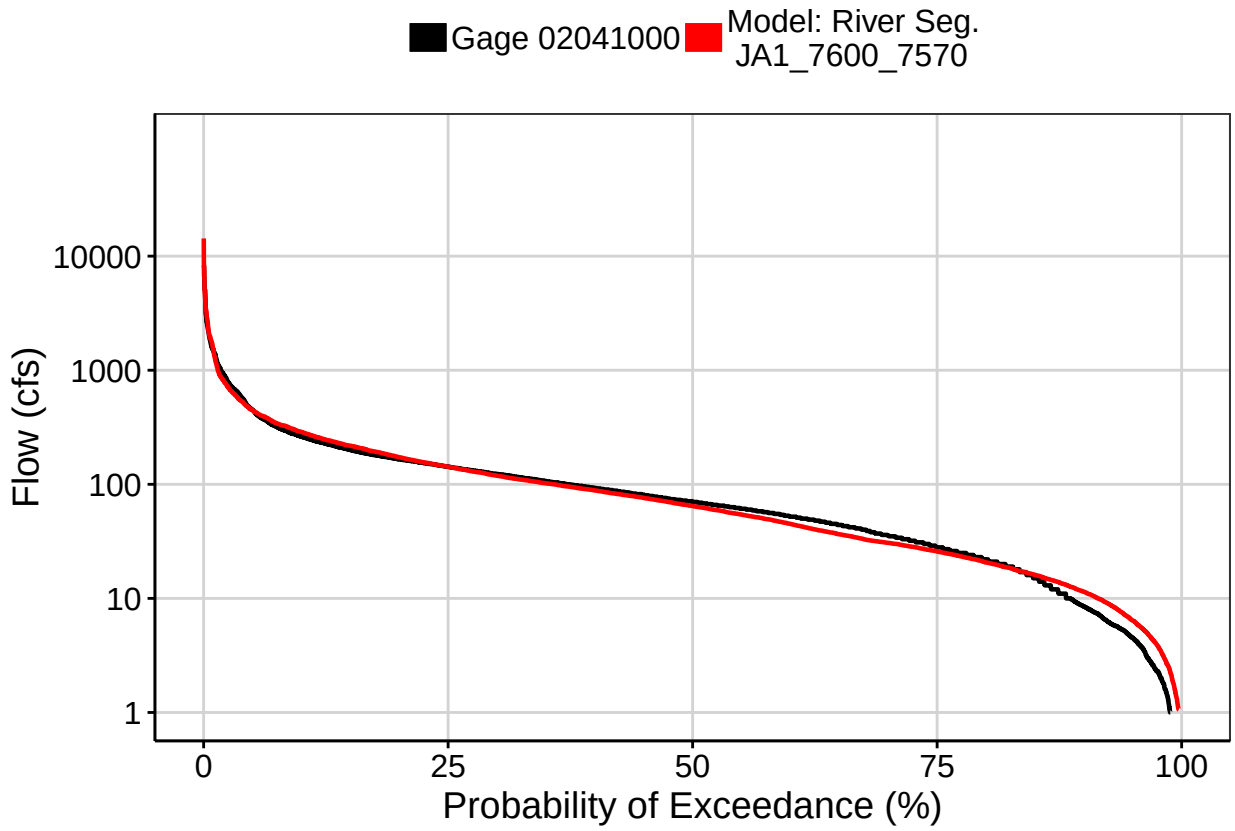


Fig. 4: Baseflow

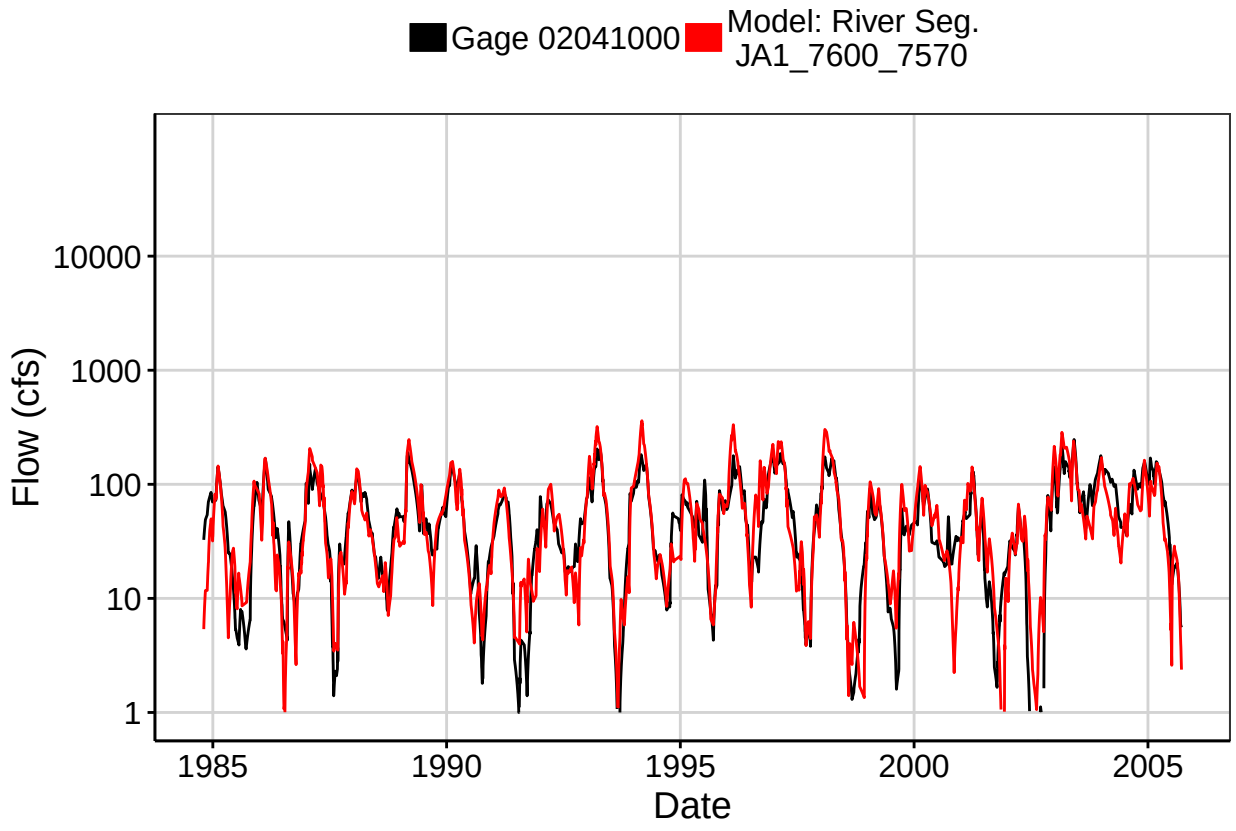


Fig. 5: Combined Baseflow

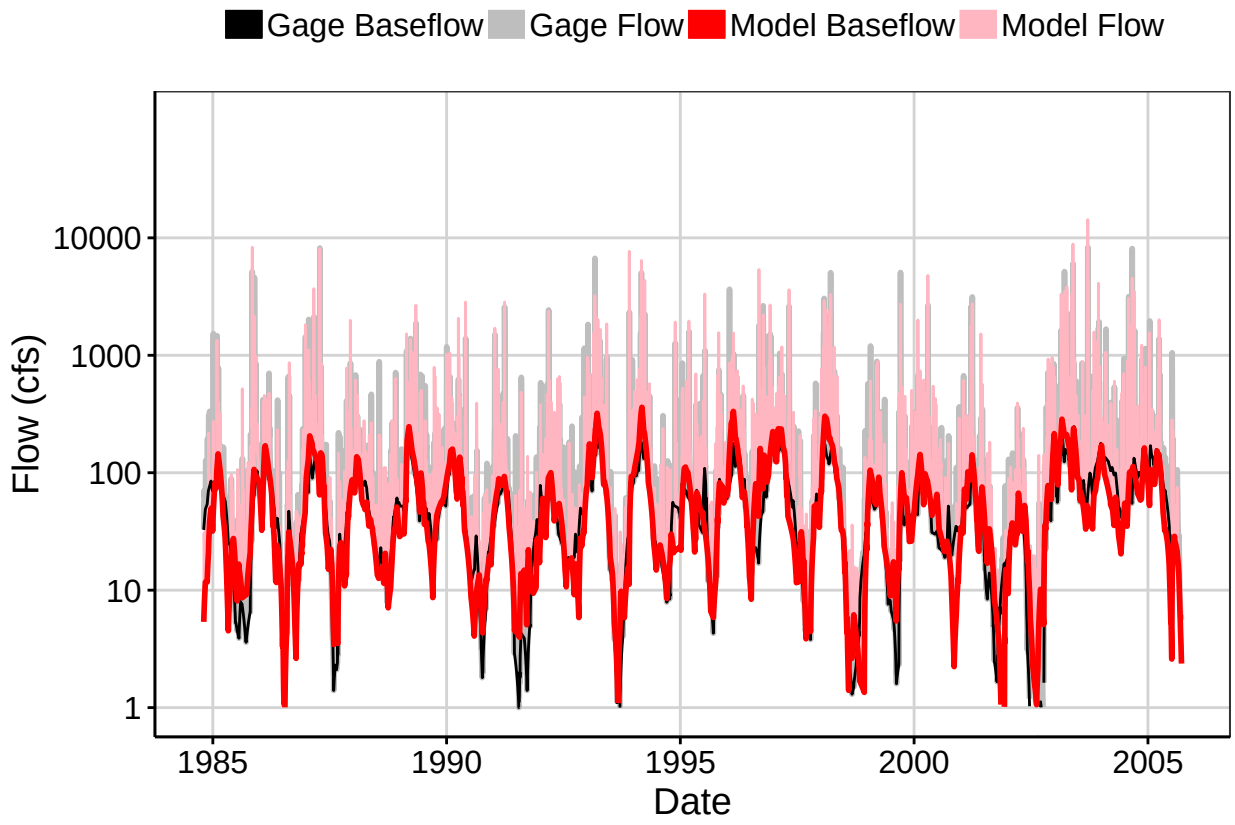


Fig. 6: Largest Error Segment

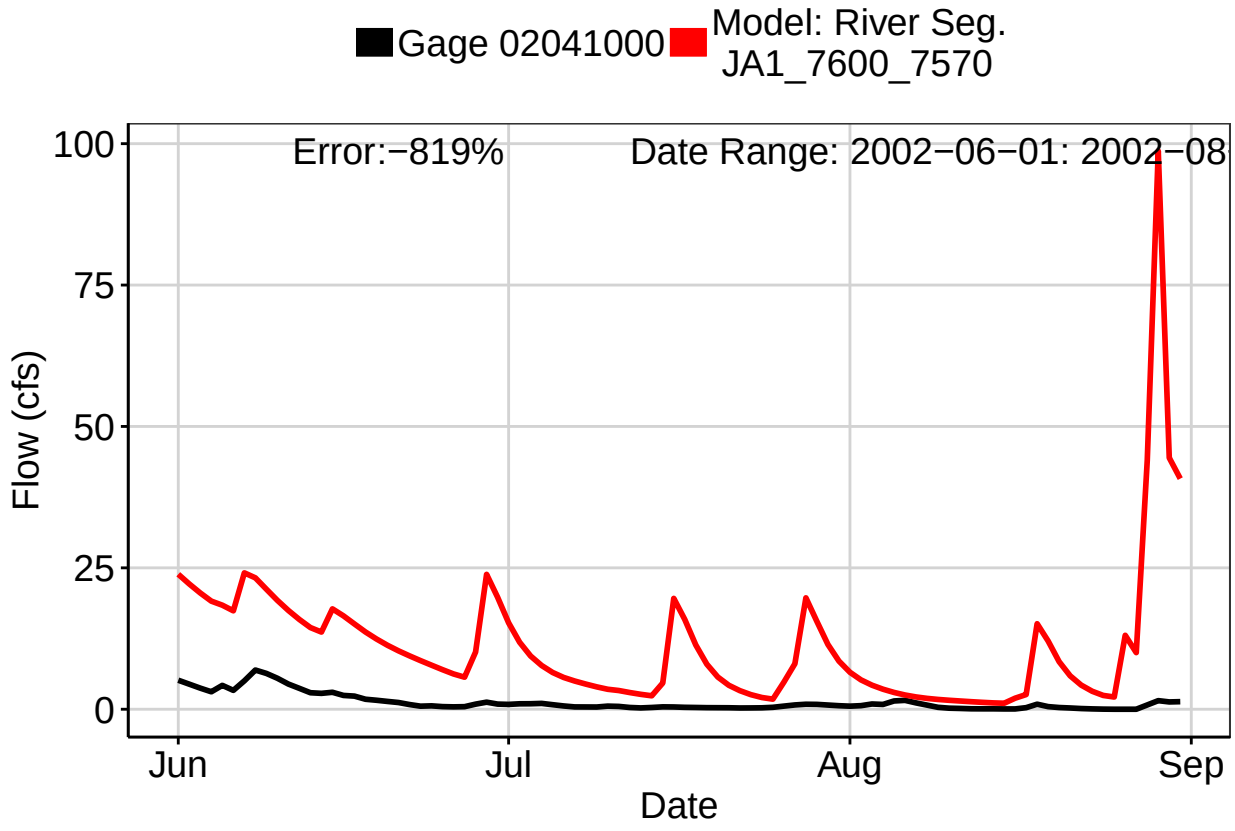


Fig. 7: Second Largest Error Segment

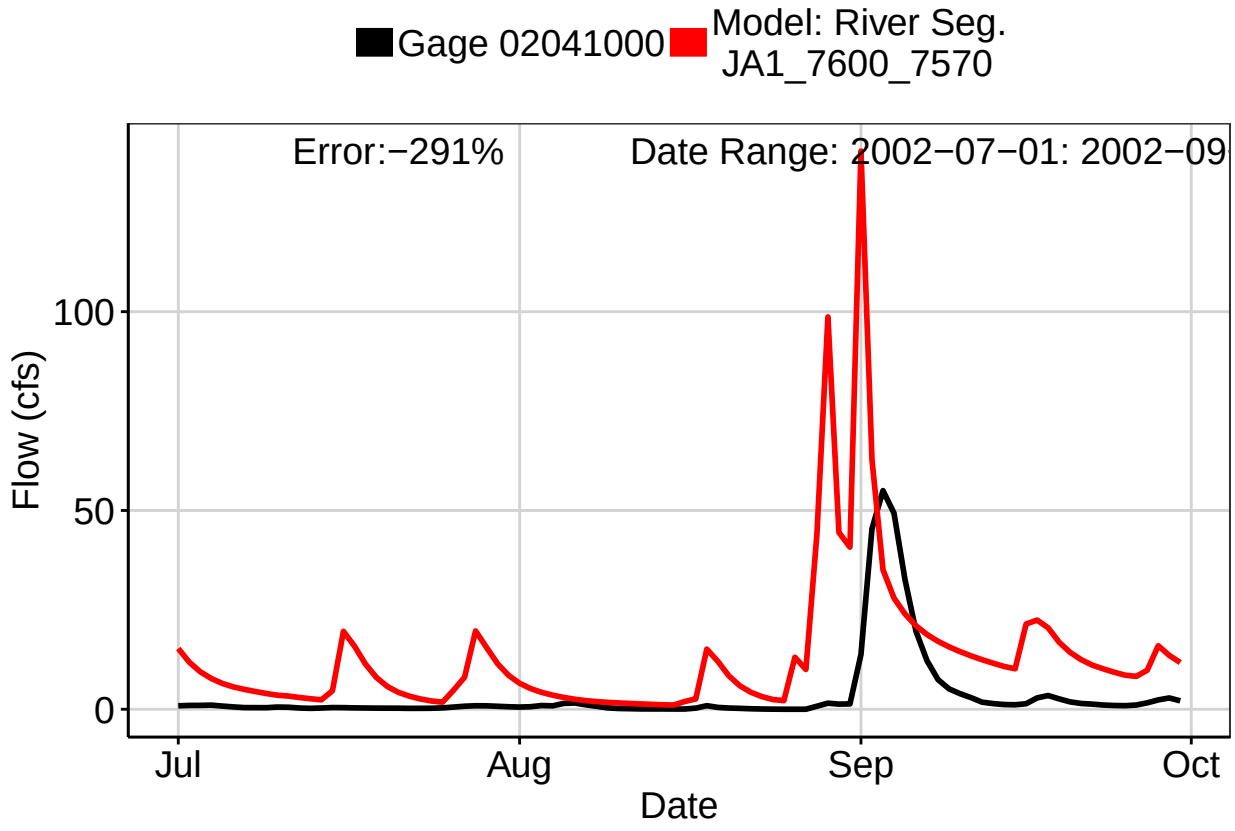


Fig. 8: Third Largest Error Segment

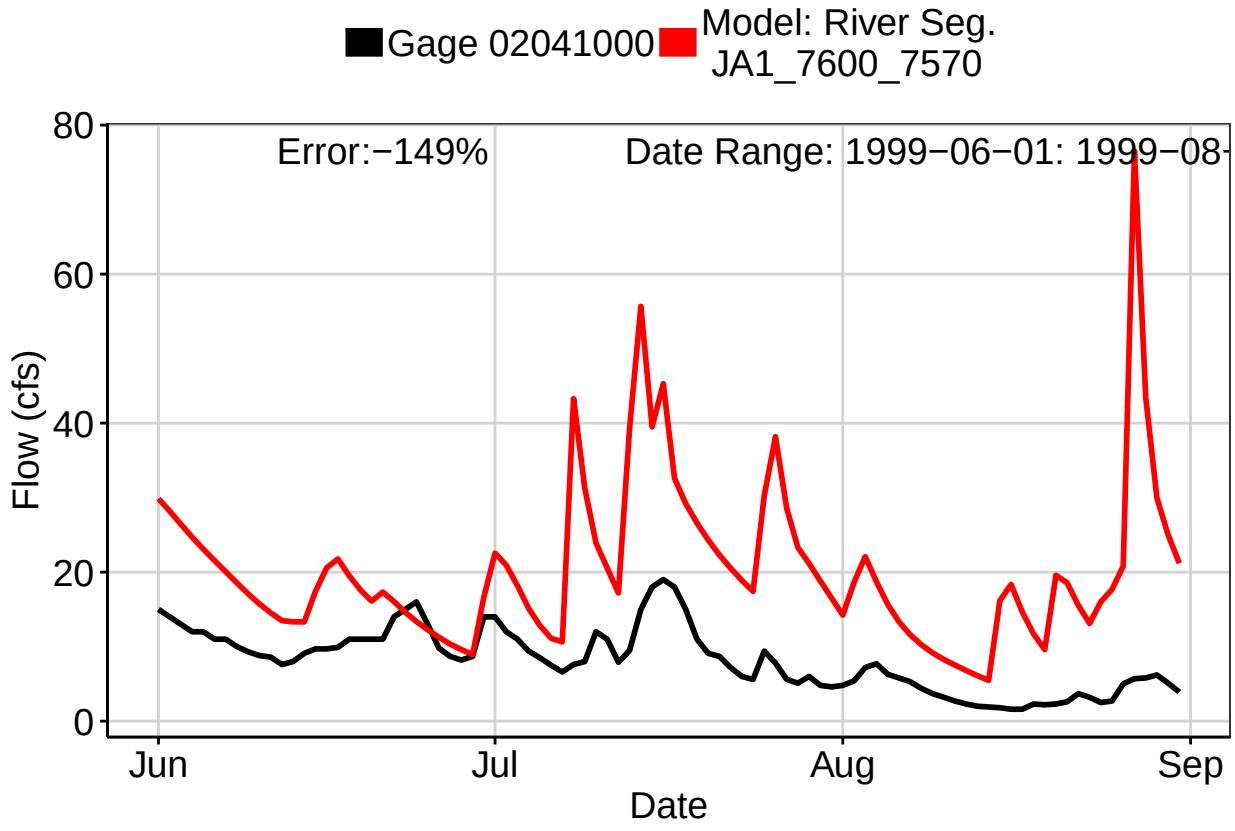


Fig. 9: Residuals Plot