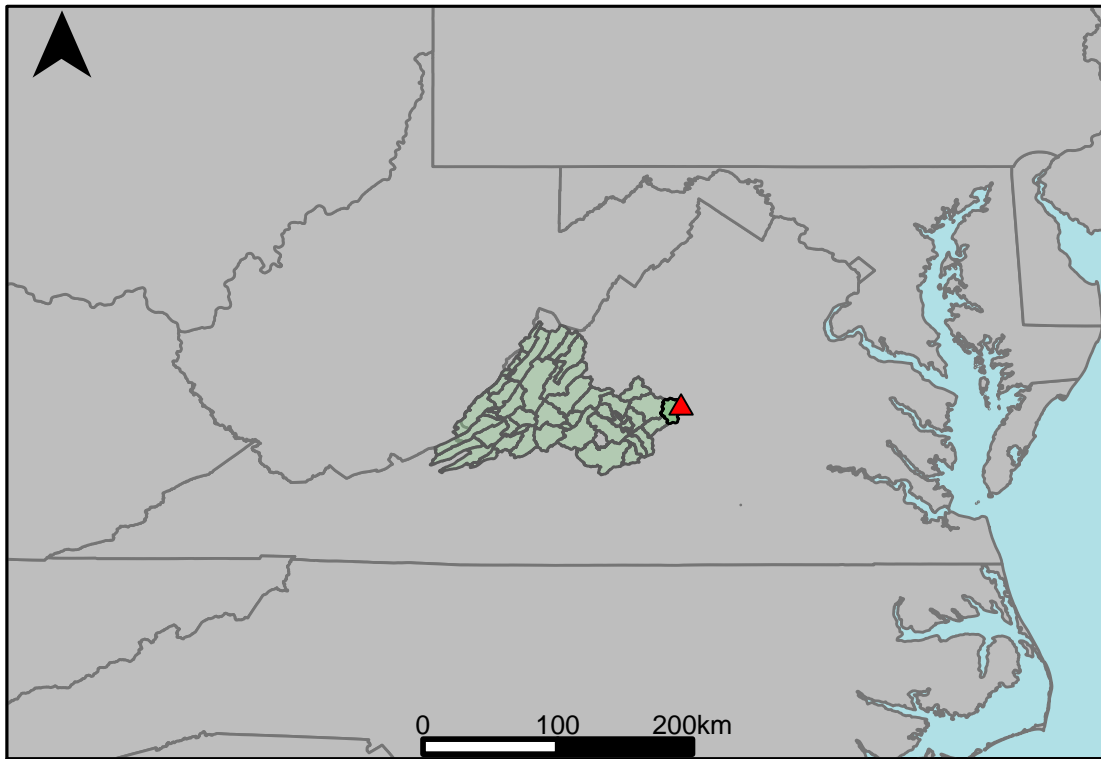


Appendix A.25: USGS Gage 02029000
vs. JL6_6890_6990
Lower James River



This river segment follows part of the flow of the James River, a tributary of the James. The gage is located in Albemarle County (Lat. 37°47'50.5", Long. -78°29'29.0"), approximately 0.5 mile south of Scottsville, VA. Drainage area is 4581 sq. miles. This gage started taking data in 1924 and is still taking data. Large diurnal fluctuations are caused by powerplants upstream. Flow has also been regulated since December 1979 by Lake Moomaw (station 02011795) 197.5 mi upstream; since October 1984 by Back Creek Lake 225.5 mi upstream; and since January 1985 by Little Back Creek Lake 228.6 mi upstream, amount unknown. The average daily discharge error between the model and gage data for the 20 year timespan was -1.3%, with 25.4% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	918	919	0.11
Feb. Low Flow	1410	1560	10.6
Mar. Low Flow	2030	2810	38.4
Apr. Low Flow	2140	3240	51.4
May Low Flow	2950	4300	45.8
Jun. Low Flow	3790	4390	15.8
Jul. Low Flow	3450	3210	-6.96
Aug. Low Flow	3100	2440	-21.3
Sep. Low Flow	1840	1560	-15.2
Oct. Low Flow	1450	1040	-28.3
Nov. Low Flow	1140	1050	-7.89
Dec. Low Flow	862	851	-1.28

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	5390	5460	1.3
Jan. Mean Flow	6970	6810	-2.3
Feb. Mean Flow	7540	8420	11.7
Mar. Mean Flow	9370	9550	1.92
Apr. Mean Flow	8510	7860	-7.64
May Mean Flow	6650	6000	-9.77
Jun. Mean Flow	4700	4680	-0.43
Jul. Mean Flow	2650	2630	-0.76
Aug. Mean Flow	2260	2240	-0.88
Sep. Mean Flow	3640	4160	14.3
Oct. Mean Flow	2680	3310	23.5
Nov. Mean Flow	4720	4900	3.81
Dec. Mean Flow	5190	5190	0

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	3410	2880	-15.5
Feb. High Flow	11900	11100	-6.72
Mar. High Flow	15400	9430	-38.8
Apr. High Flow	17300	11800	-31.8
May High Flow	13100	11100	-15.3
Jun. High Flow	21100	24600	16.6
Jul. High Flow	21600	18100	-16.2
Aug. High Flow	11900	10400	-12.6
Sep. High Flow	5260	6140	16.7
Oct. High Flow	5030	3720	-26
Nov. High Flow	3150	2810	-10.8
Dec. High Flow	2940	2810	-4.42

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	452	243	-46.2
Med. 1 Day Min	797	606	-24
Min. 3 Day Min	479	244	-49.1
Med. 3 Day Min	894	618	-30.9
Min. 7 Day Min	499	250	-49.9
Med. 7 Day Min	985	654	-33.6
Min. 30 Day Min	629	320	-49.1
Med. 30 Day Min	1150	947	-17.7
Min. 90 Day Min	826	672	-18.6
Med. 90 Day Min	1790	1710	-4.47
7Q10	665	354	-46.8
Year of 90-Day Min. Flow	2002	1999	100
Drought Year Mean	1850	1880	1.62
Mean Baseflow	2910	3310	13.7

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	199000	178000	-10.6
Med. 1 Day Max	57400	48900	-14.8
Max. 3 Day Max	144000	119000	-17.4
Med. 3 Day Max	46000	36700	-20.2
Max. 7 Day Max	82700	65800	-20.4
Med. 7 Day Max	29700	25800	-13.1
Max. 30 Day Max	28900	25300	-12.5
Med. 30 Day Max	14600	13900	-4.79
Max. 90 Day Max	18500	19300	4.32
Med. 90 Day Max	9710	10000	2.99

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	708	412	-41.8
5% Non-Exceedance	974	635	-34.8
50% Non-Exceedance	3210	3570	11.2
95% Non-Exceedance	16800	16300	-2.98
99% Non-Exceedance	34800	35900	3.16
Sept. 10% Non-Exceedance	891	602	-32.4

Fig. 1: Hydrograph

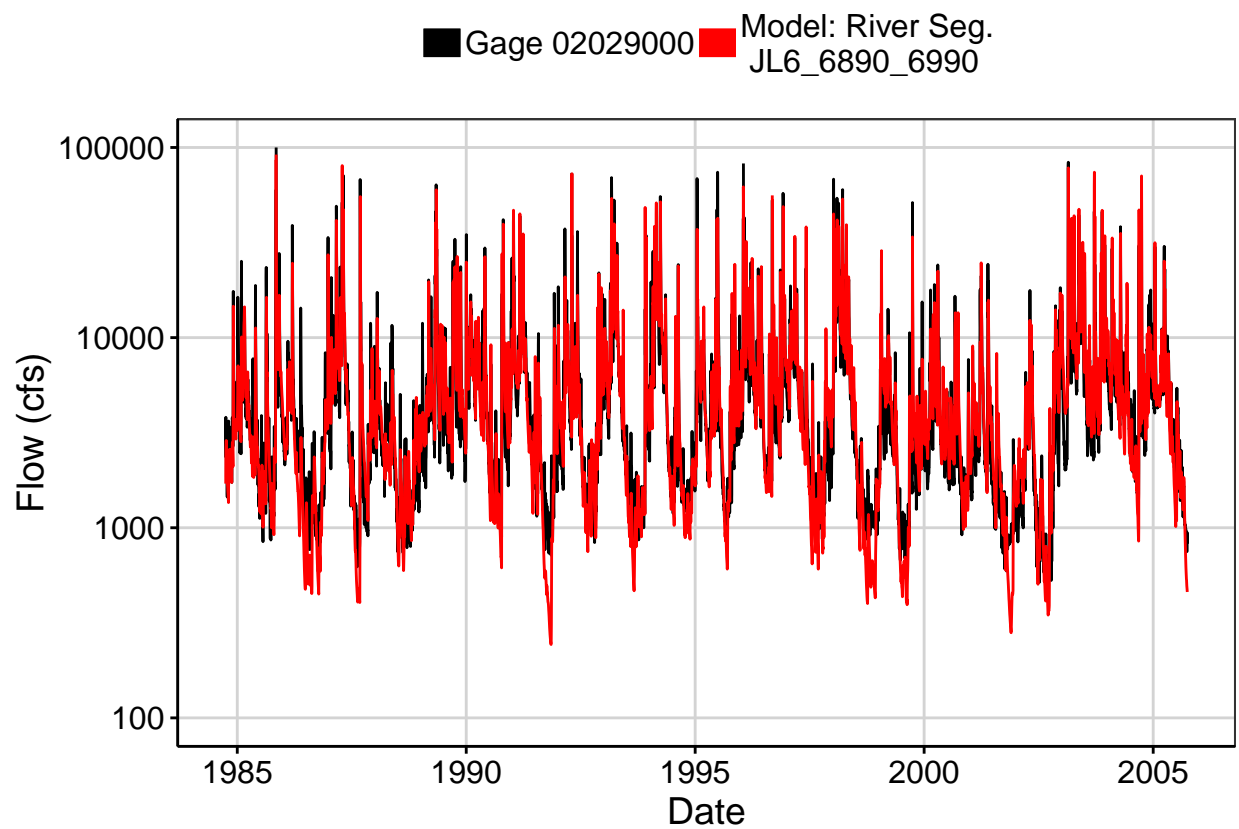


Fig. 2: Zoomed Hydrograph

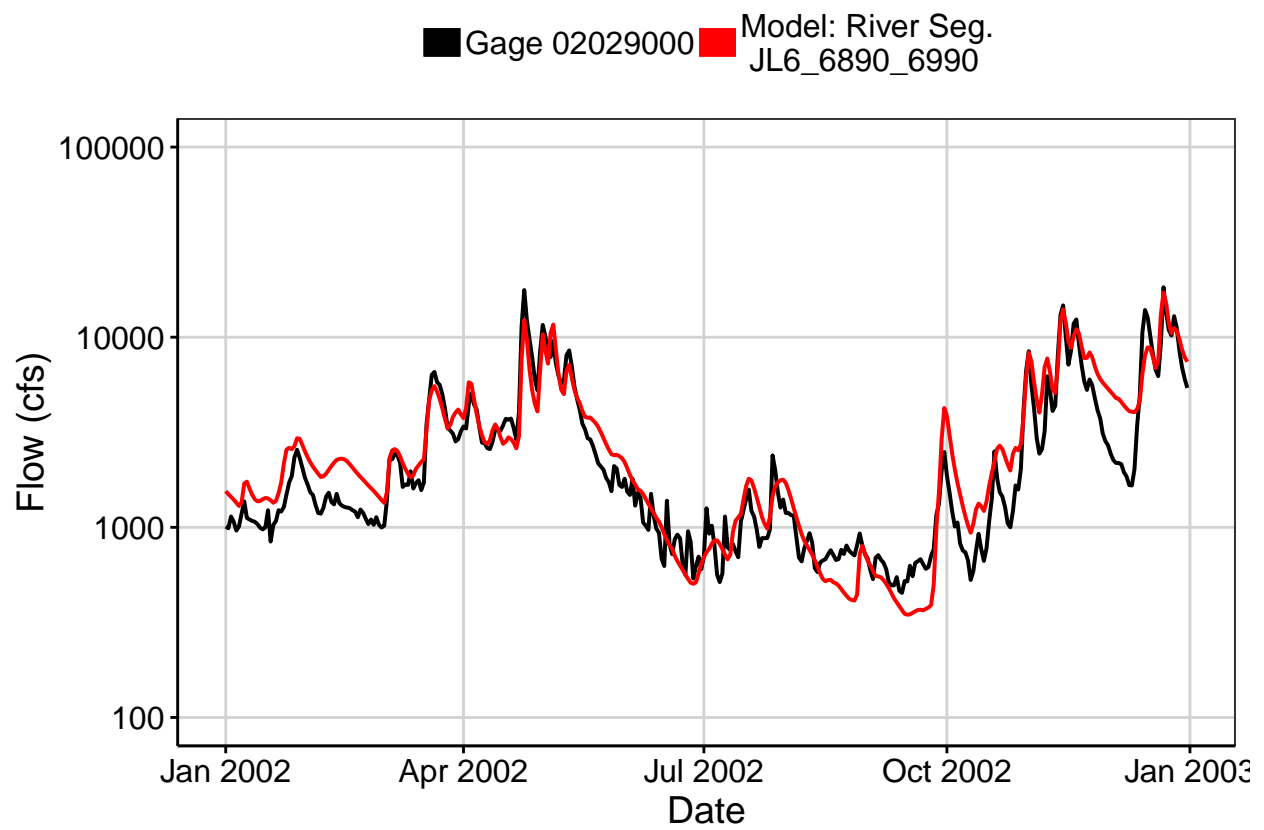


Fig. 3: Flow Exceedance

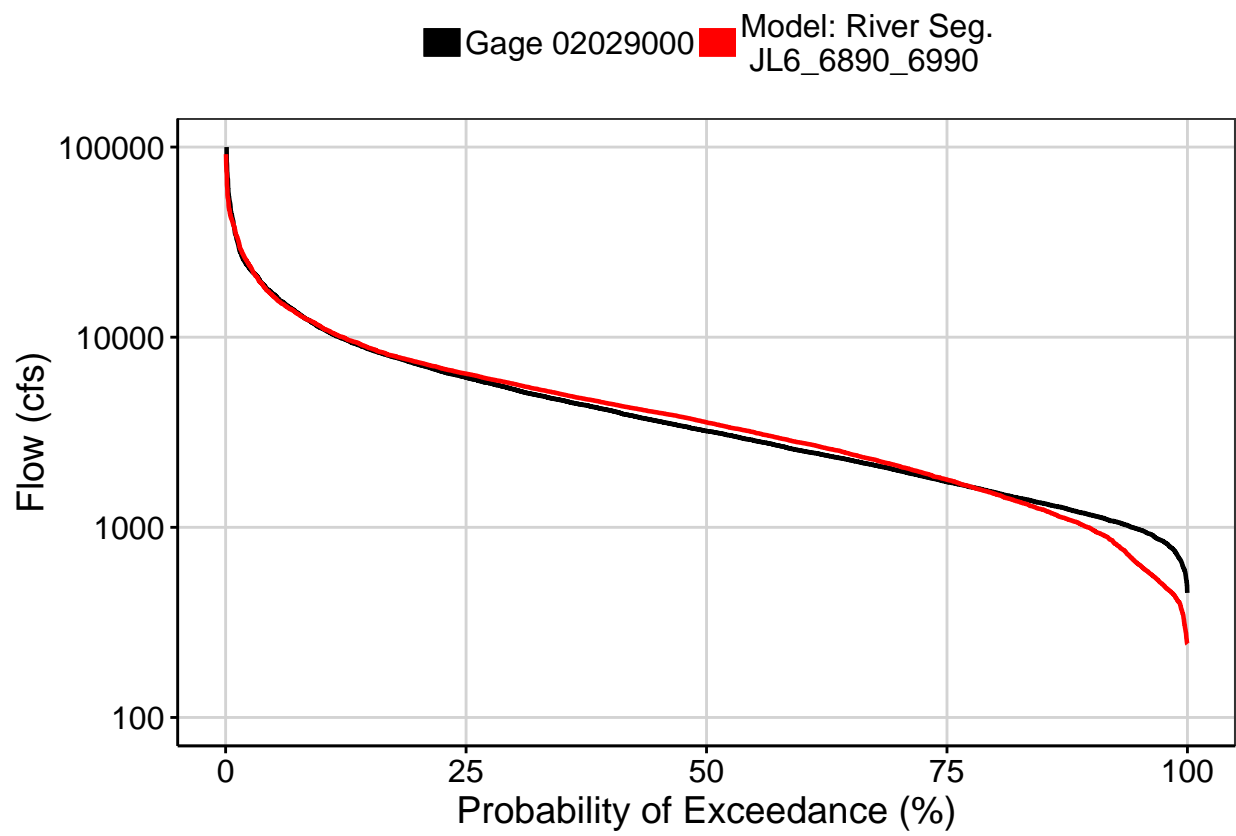


Fig. 4: Baseflow

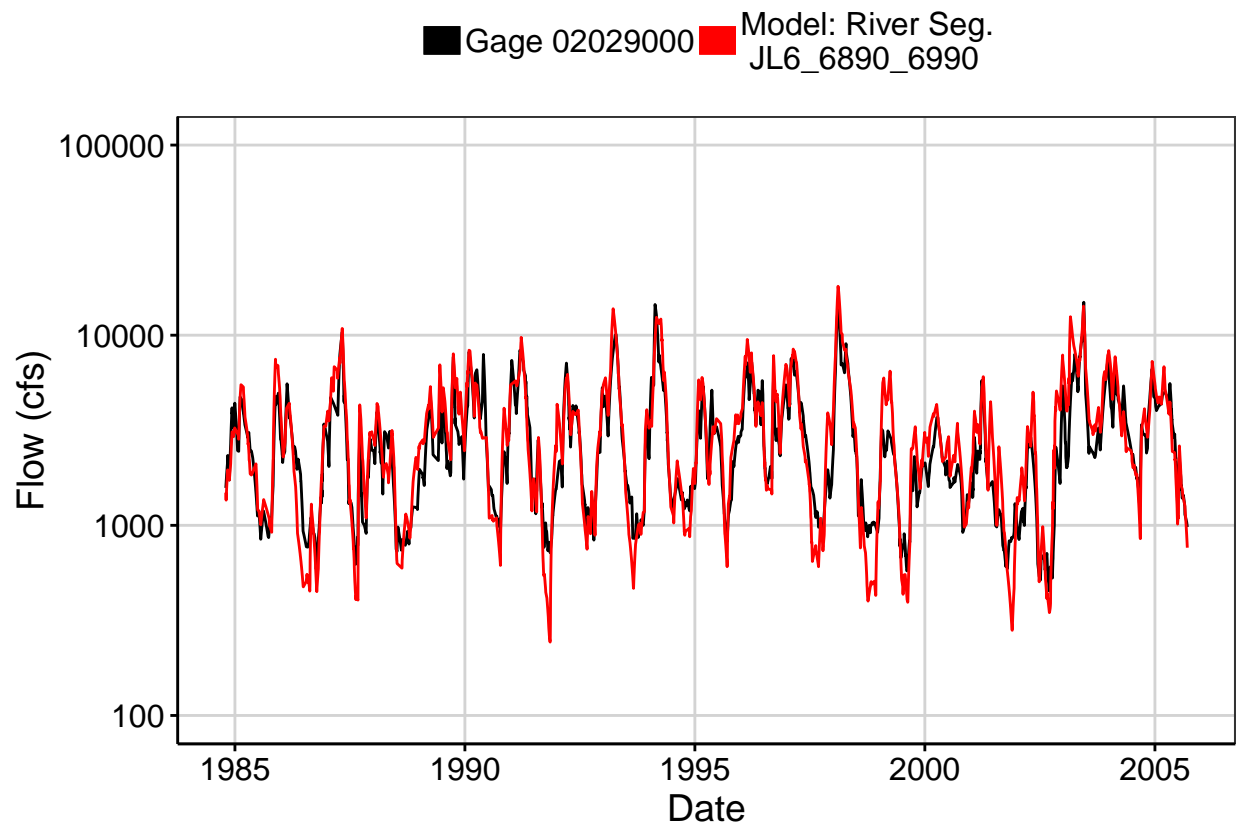


Fig. 5: Combined Baseflow

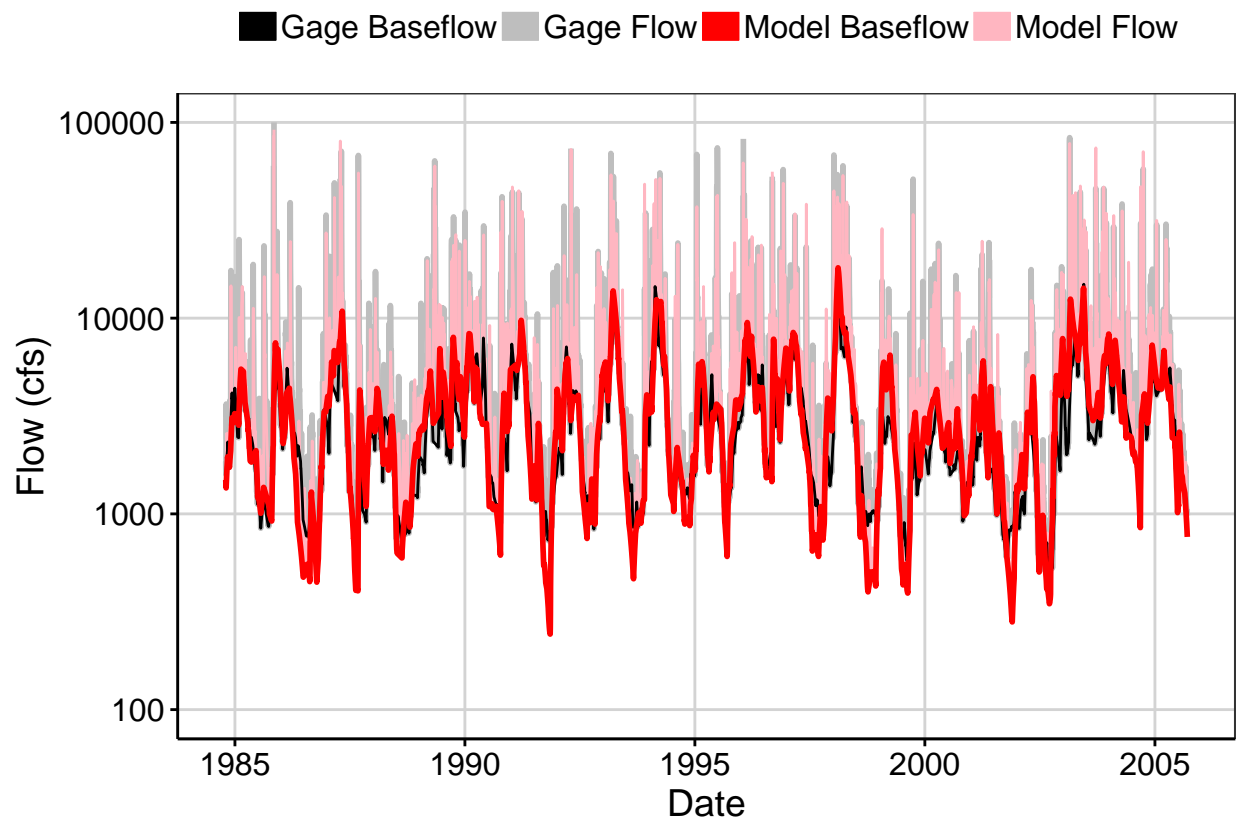


Fig. 6: Largest Error Segment

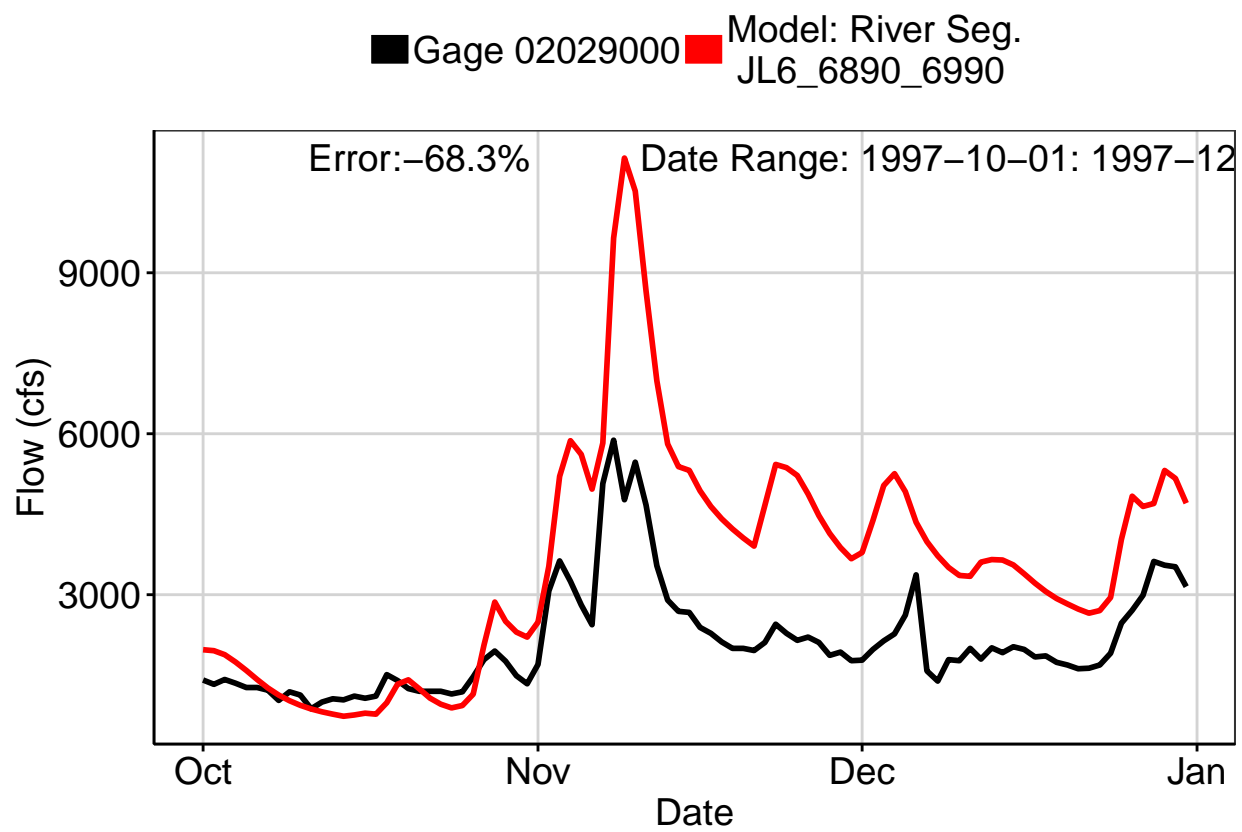


Fig. 7: Second Largest Error Segment

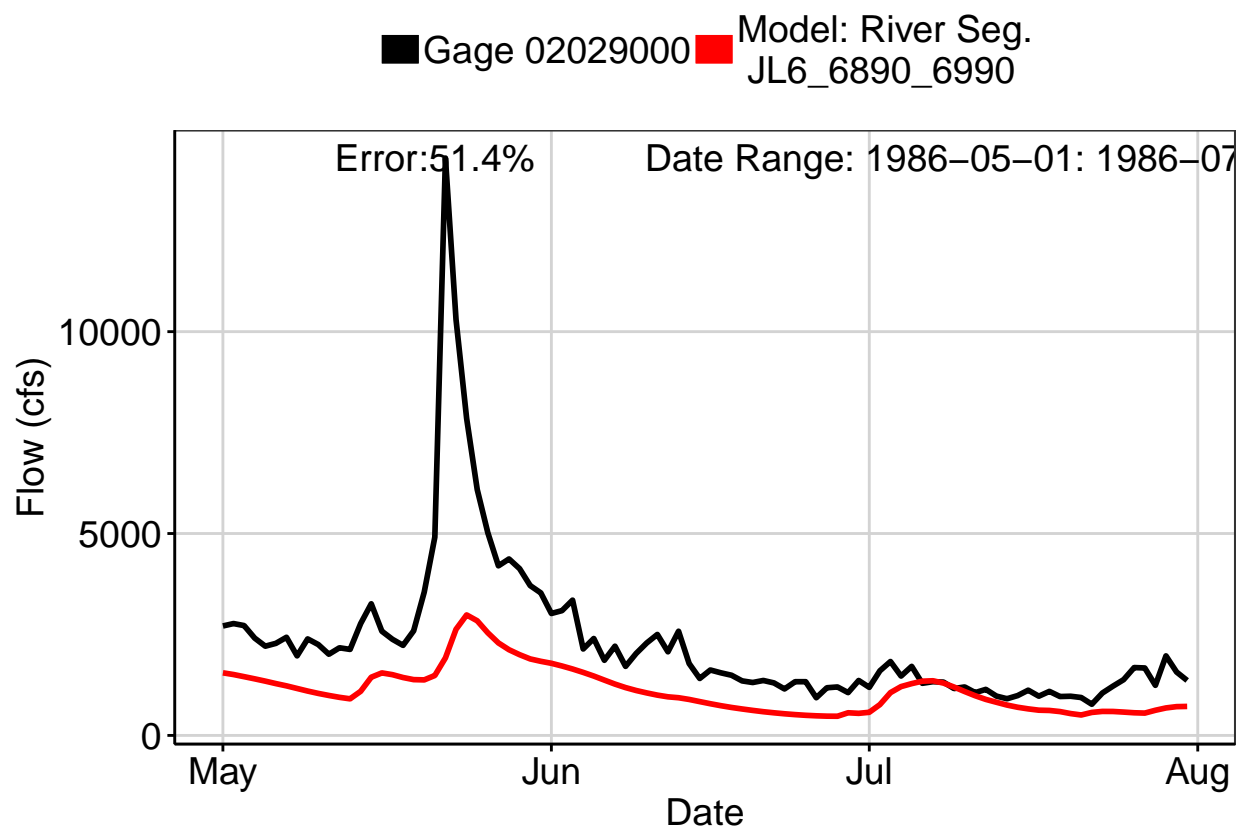


Fig. 8: Third Largest Error Segment

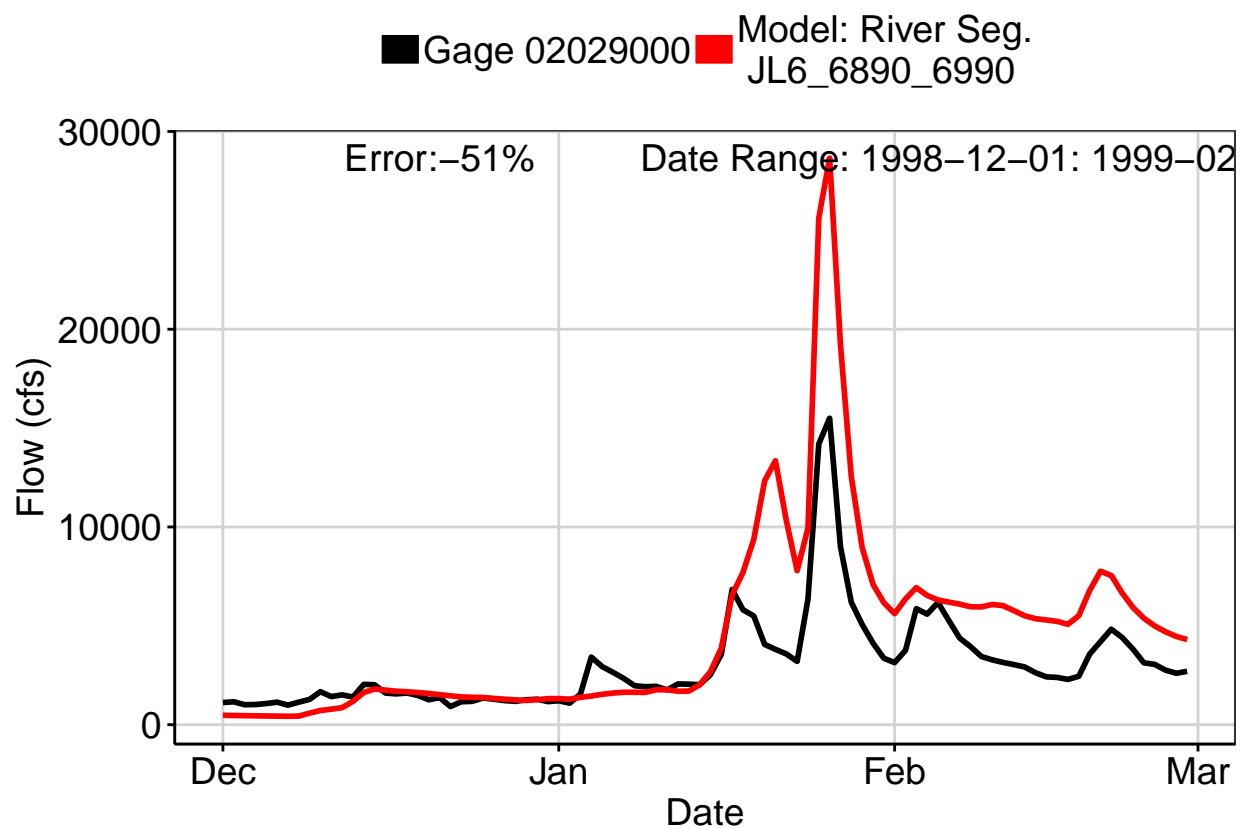


Fig. 9: Residuals Plot

