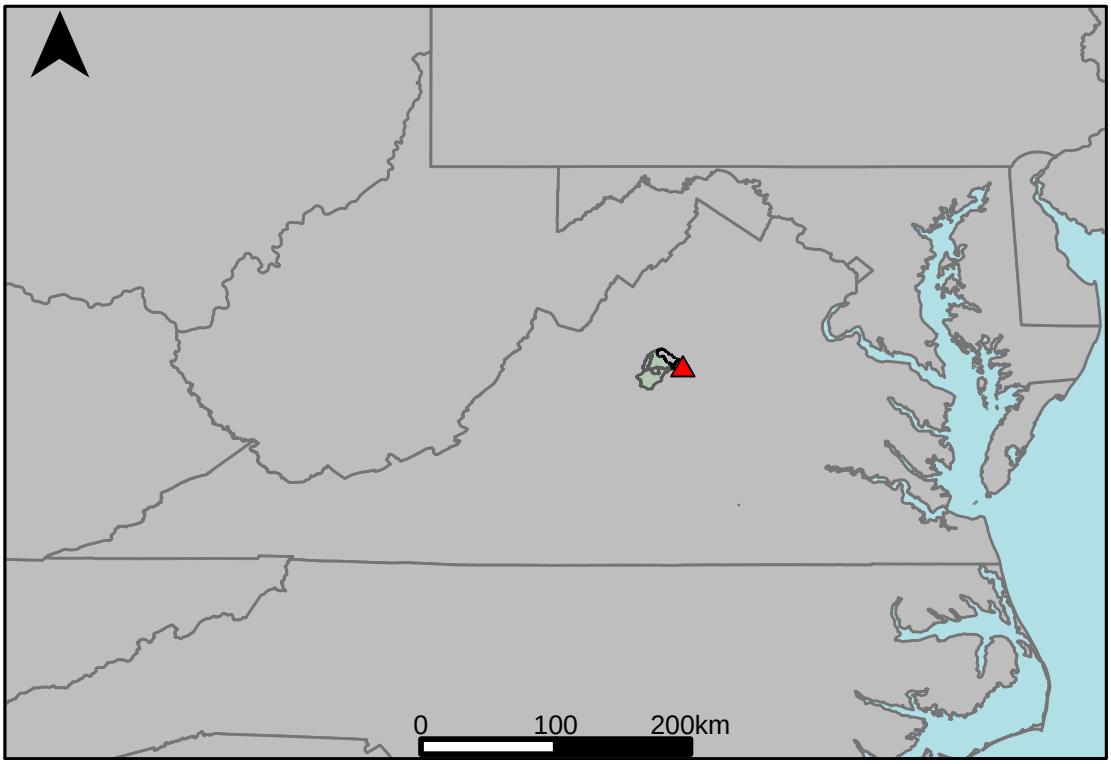
Appendix A.29: USGS Gage 02032515 vs. JL2_6441_6520 Lower James River



This river segment follows part of the flow of the South Fork of Rivanna River, a tributary of the James. The gage is located in Albemarle County (Lat. 38°06'06.5", Long. -78°27'38.0"), approximately 6 miles north of Charlottesville, VA. Drainage area is 259 sq. miles. This gage started taking data in 1979 but was decommissioned in 1997. 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 8.28%, with 45.8% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	16	33	106
Feb. Low Flow	92	61.7	-32.9
Mar. Low Flow	129	118	-8.53
Apr. Low Flow	122	175	43.4
May Low Flow	182	233	28
Jun. Low Flow	188	197	4.79
Jul. Low Flow	168	123	-26.8
Aug. Low Flow	103	77.2	-25
Sep. Low Flow	46	44.7	-2.83
Oct. Low Flow	18	19.3	7.22
Nov. Low Flow	16	19.3	20.6
Dec. Low Flow	14	19.3	37.9

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	302	277	-8.28
Jan. Mean Flow	410	355	-13.4
Feb. Mean Flow	344	390	13.4
Mar. Mean Flow	482	486	0.83
Apr. Mean Flow	429	342	-20.3
May Mean Flow	324	265	-18.2
Jun. Mean Flow	272	167	-38.6
Jul. Mean Flow	187	204	9.09
Aug. Mean Flow	113	110	-2.65
Sep. Mean Flow	214	240	12.1
Oct. Mean Flow	196	174	-11.2
Nov. Mean Flow	350	302	-13.7
Dec. Mean Flow	314	296	-5.73

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	260	282	8.46
Feb. High Flow	700	626	-10.6
Mar. High Flow	925	962	4
Apr. High Flow	1040	785	-24.5
May High Flow	708	611	-13.7
Jun. High Flow	1230	1370	11.4
Jul. High Flow	700	937	33.9
Aug. High Flow	592	475	-19.8
Sep. High Flow	519	439	-15.4
Oct. High Flow	838	670	-20
Nov. High Flow	248	166	-33.1
Dec. High Flow	216	131	-39.4

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	3.6	19.3	436
Med. 1 Day Min	11	19.3	75.5
Min. 3 Day Min	4.17	19.3	363
Med. 3 Day Min	14.3	19.3	35
Min. 7 Day Min	5.7	19.3	239
Med. 7 Day Min	21.2	19.3	-8.96
Min. 30 Day Min	9.73	19.3	98.4
Med. 30 Day Min	40.2	23	-42.8
Min. 90 Day Min	42.5	19.3	-54.6
Med. 90 Day Min	84.2	67.4	-20
7Q10	10.2	19.6	92.2
Year of 90-Day Min. Flow	1988	1986	100
Drought Year Mean	175	156	-10.9
Mean Baseflow	127	146	15

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	15000	13800	-8
Med. 1 Day Max	6370	4710	-26.1
Max. 3 Day Max	7840	6090	-22.3
Med. 3 Day Max	3090	3070	-0.65
Max. 7 Day Max	4480	3470	-22.5
Med. 7 Day Max	2020	1810	-10.4
Max. 30 Day Max	1530	1420	-7.19
Med. 30 Day Max	896	743	-17.1
Max. 90 Day Max	923	894	-3.14
Med. 90 Day Max	545	500	-8.26

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	9.3	19.3	108
5% Non-Exceedance	20	19.3	-3.5
50% Non-Exceedance	184	169	-8.15
95% Non-Exceedance	912	826	-9.43
99% Non-Exceedance	2320	2040	-12.1
Sept. 10% Non-Exceedance	15	19.3	28.7

Fig. 1: Hydrograph

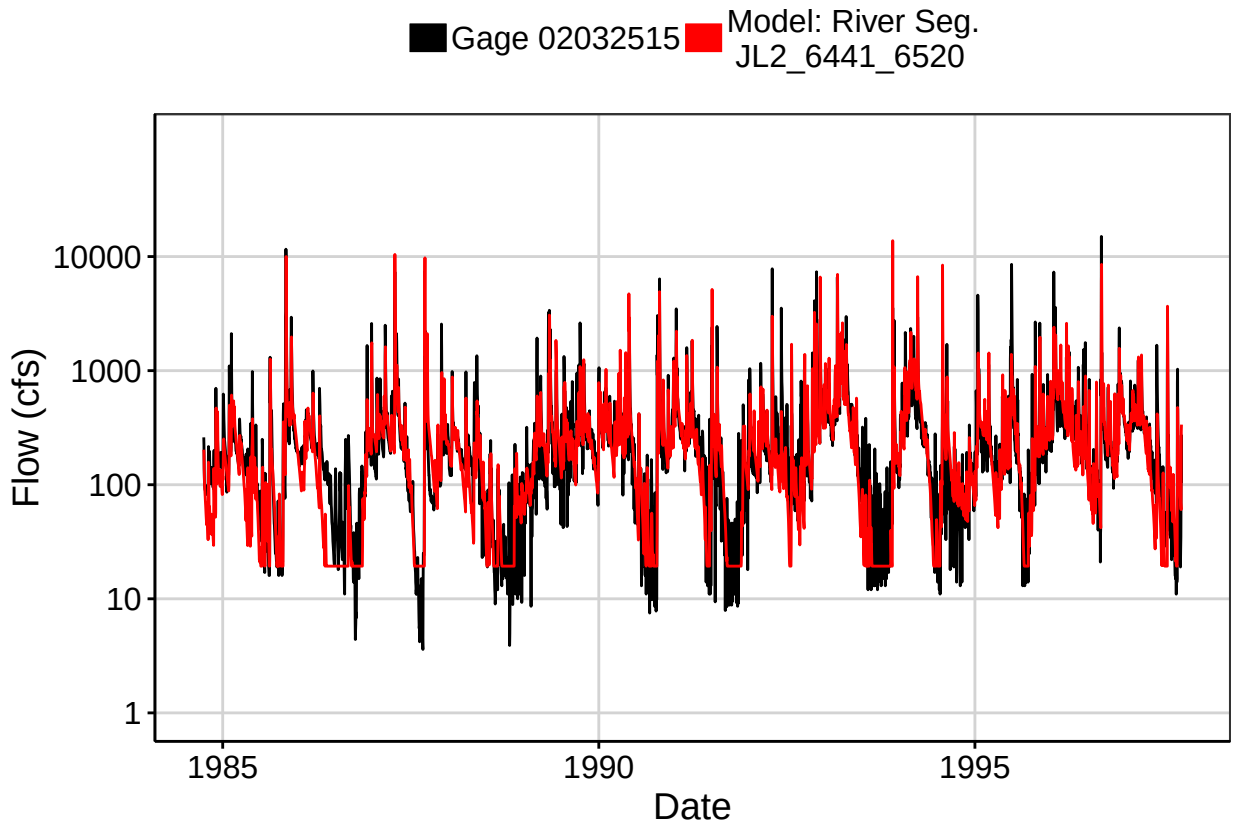


Fig. 2: Zoomed Hydrograph

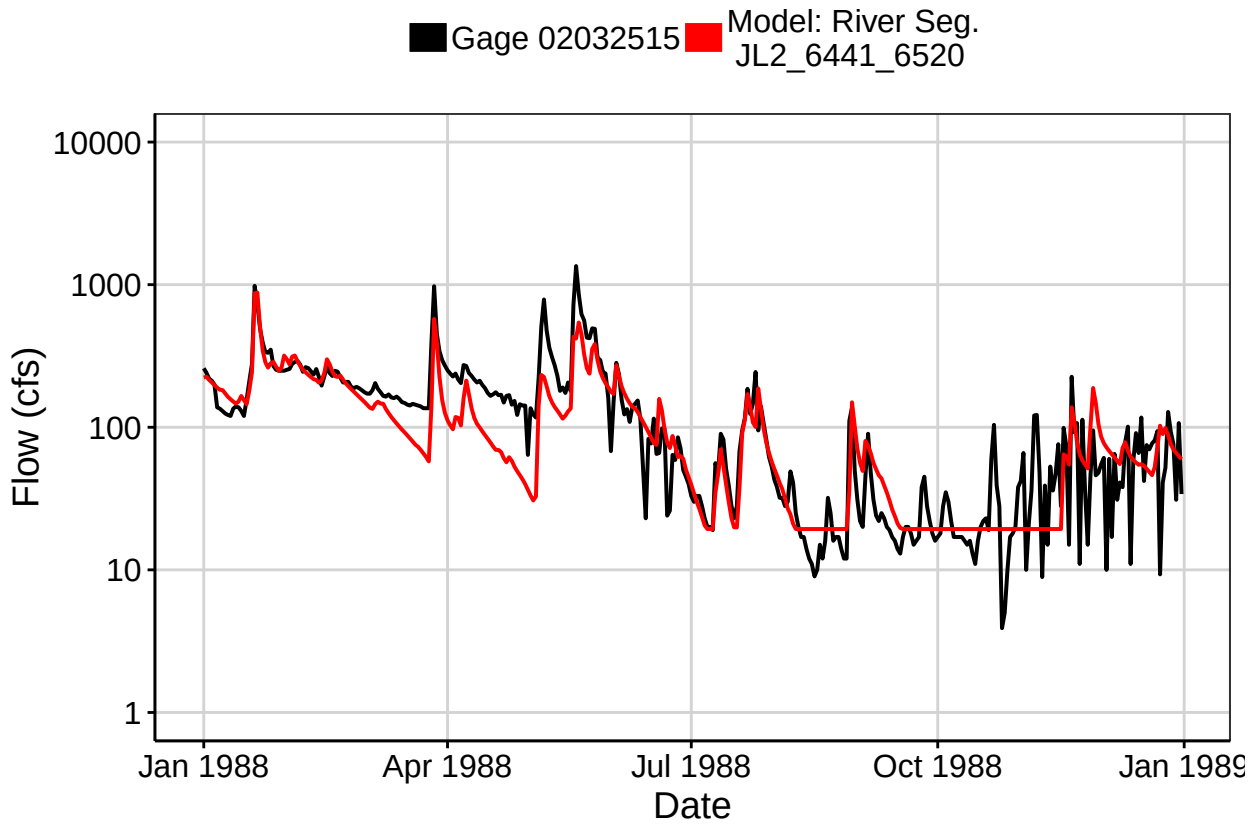


Fig. 3: Flow Exceedance

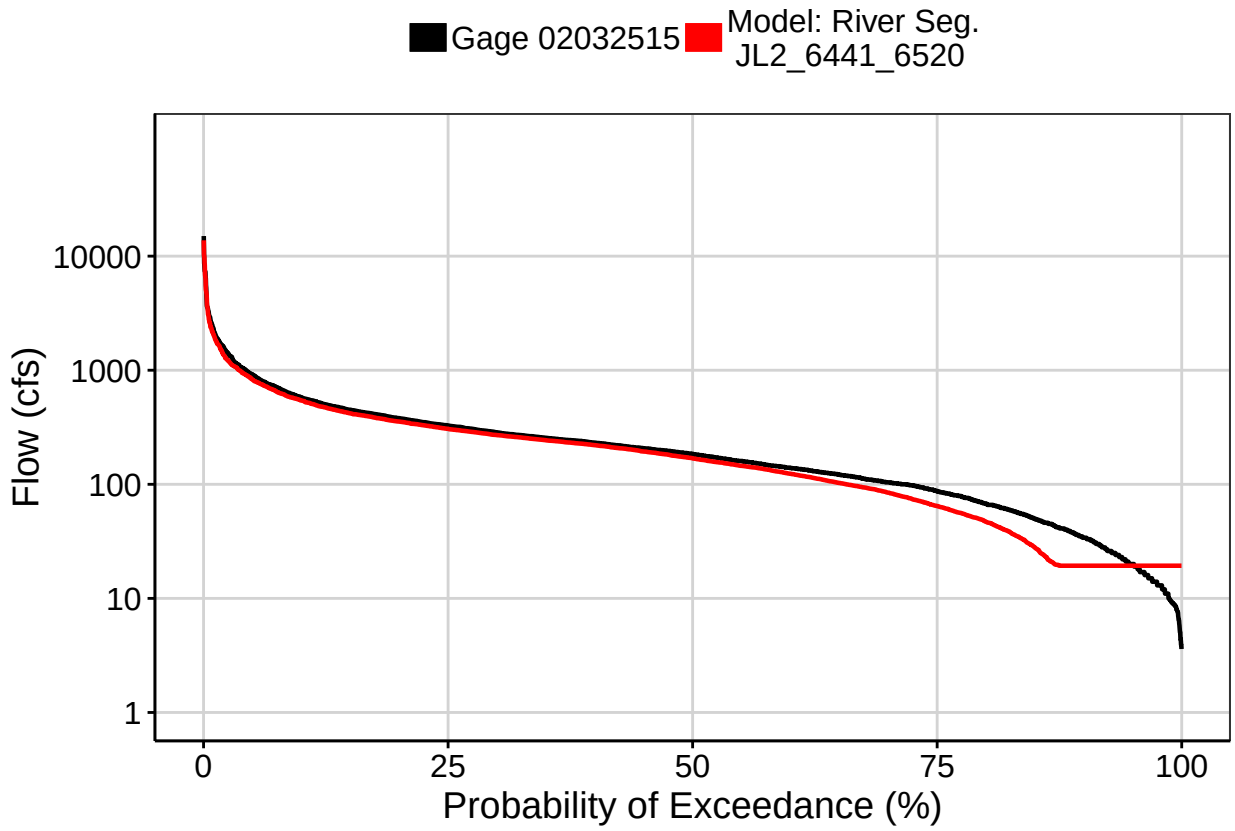


Fig. 4: Baseflow

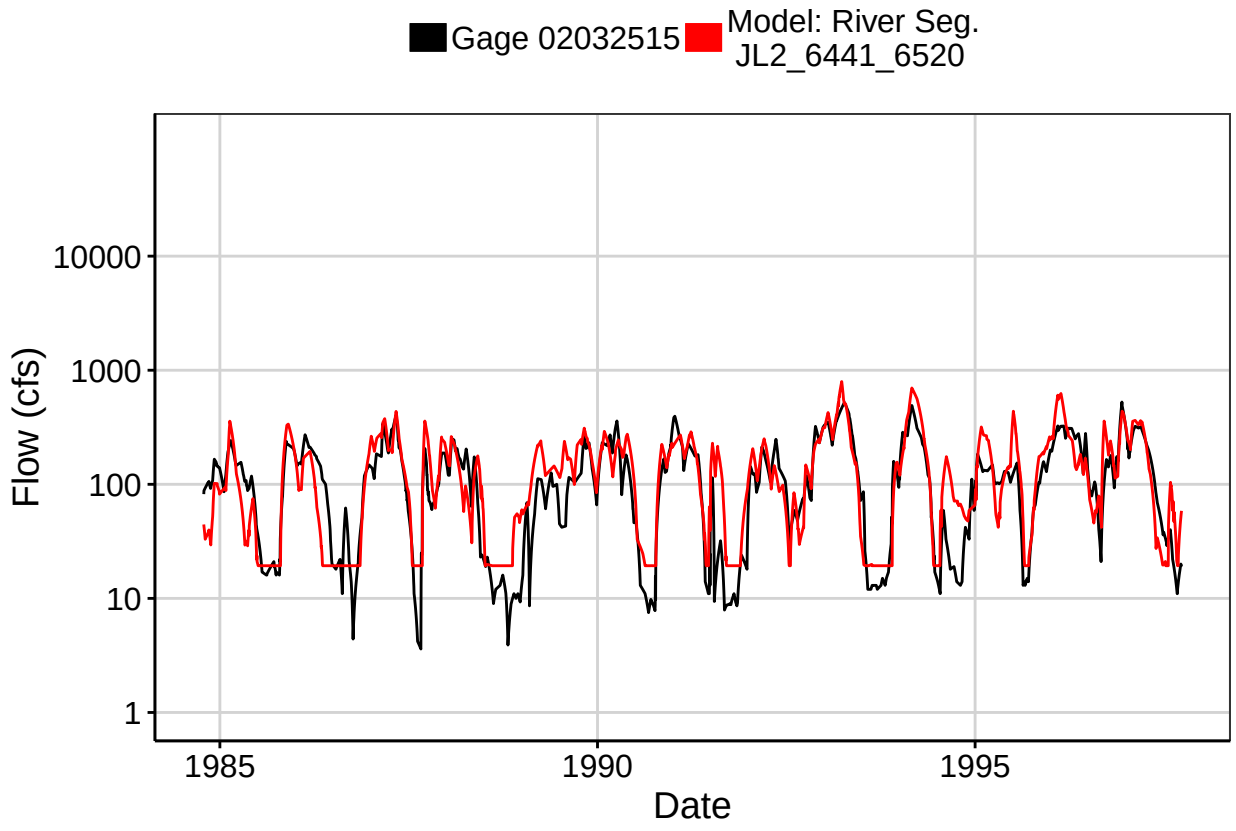


Fig. 5: Combined Baseflow

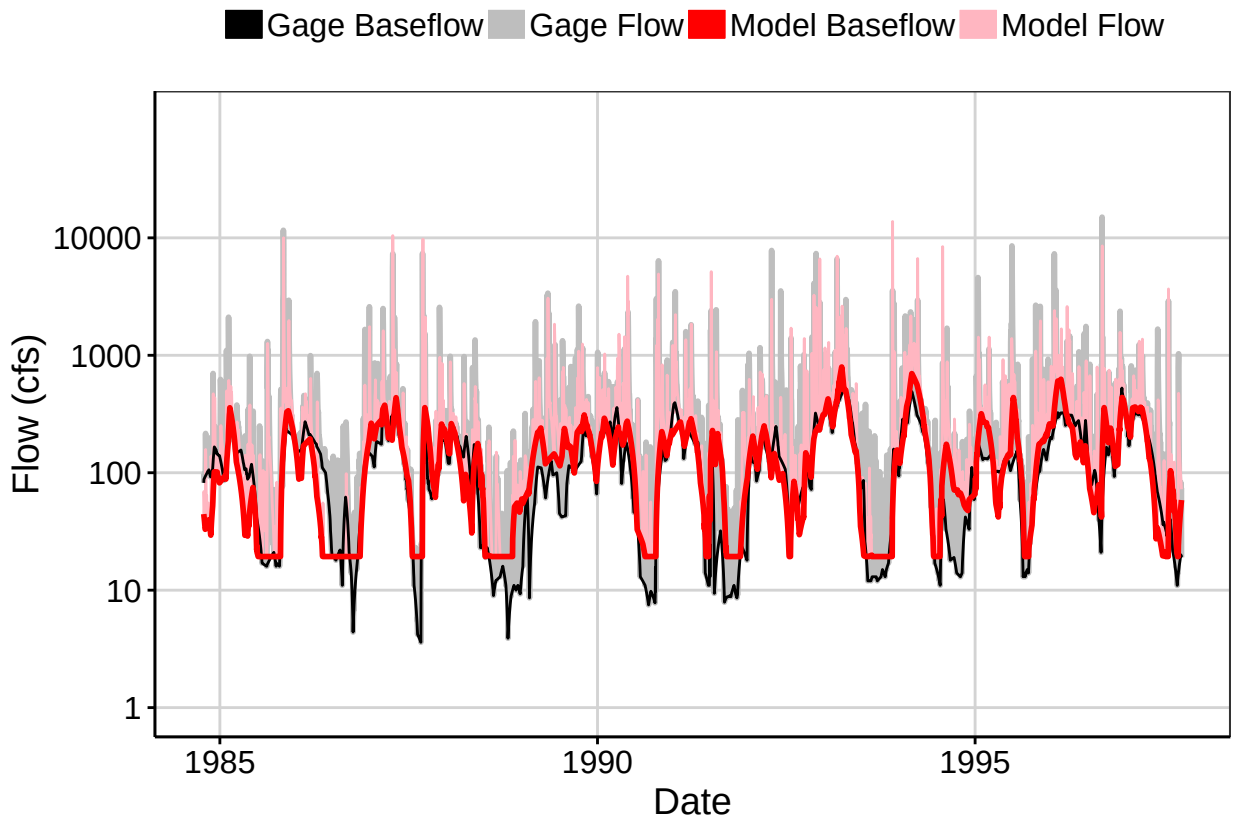


Fig. 6: Largest Error Segment

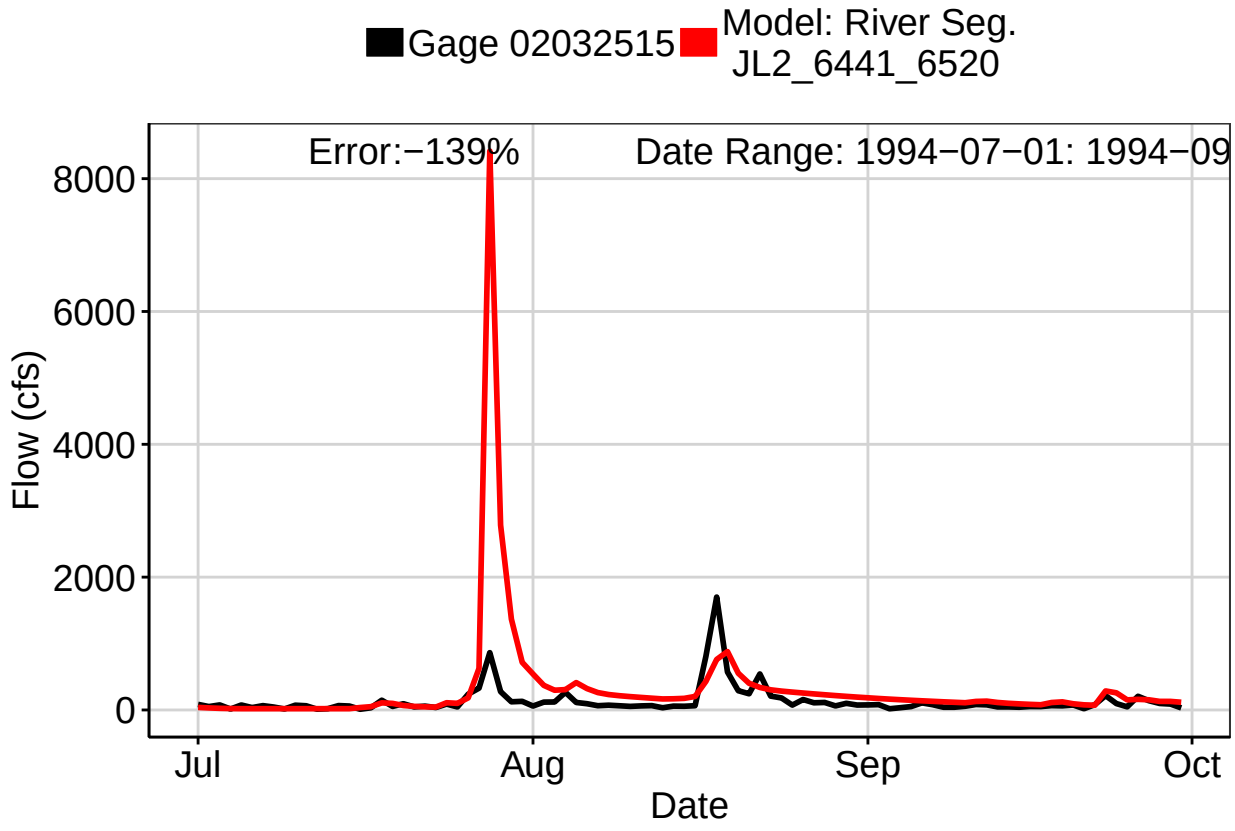


Fig. 7: Second Largest Error Segment

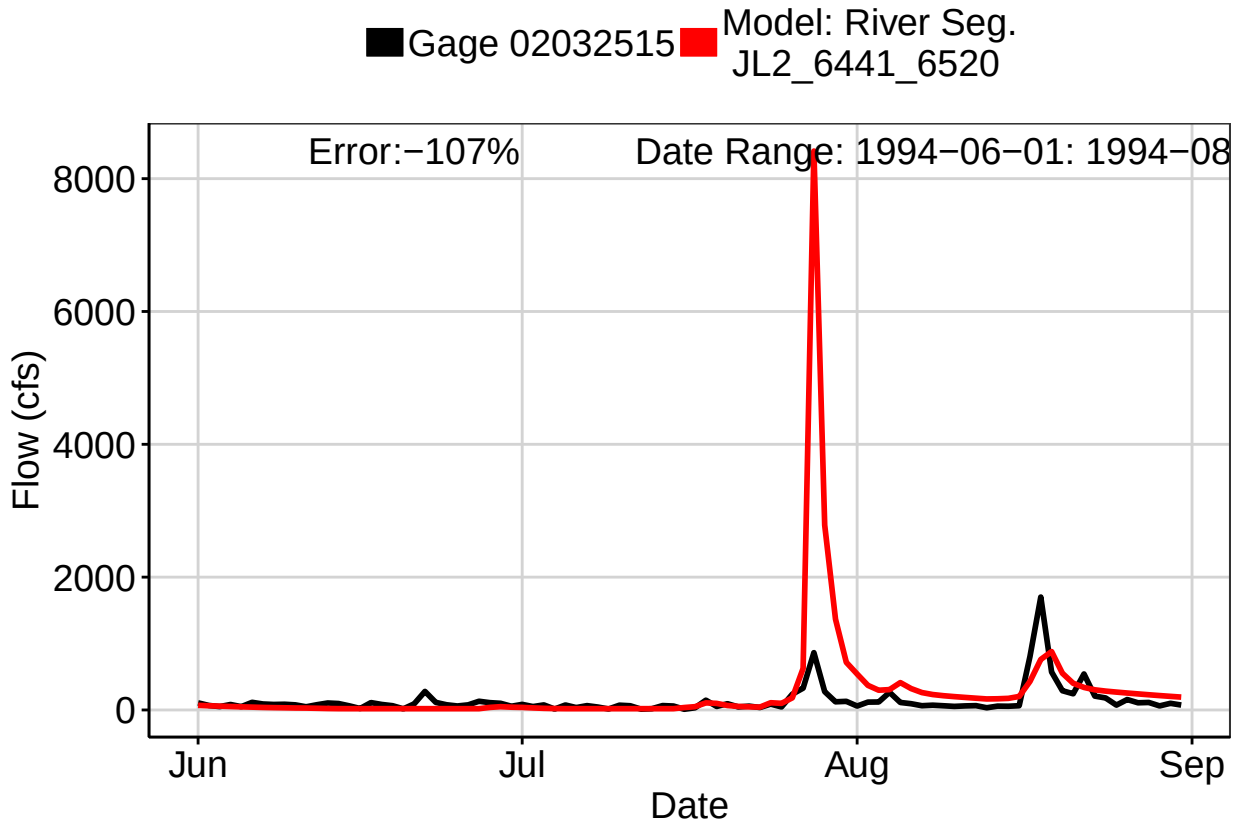


Fig. 8: Third Largest Error Segment

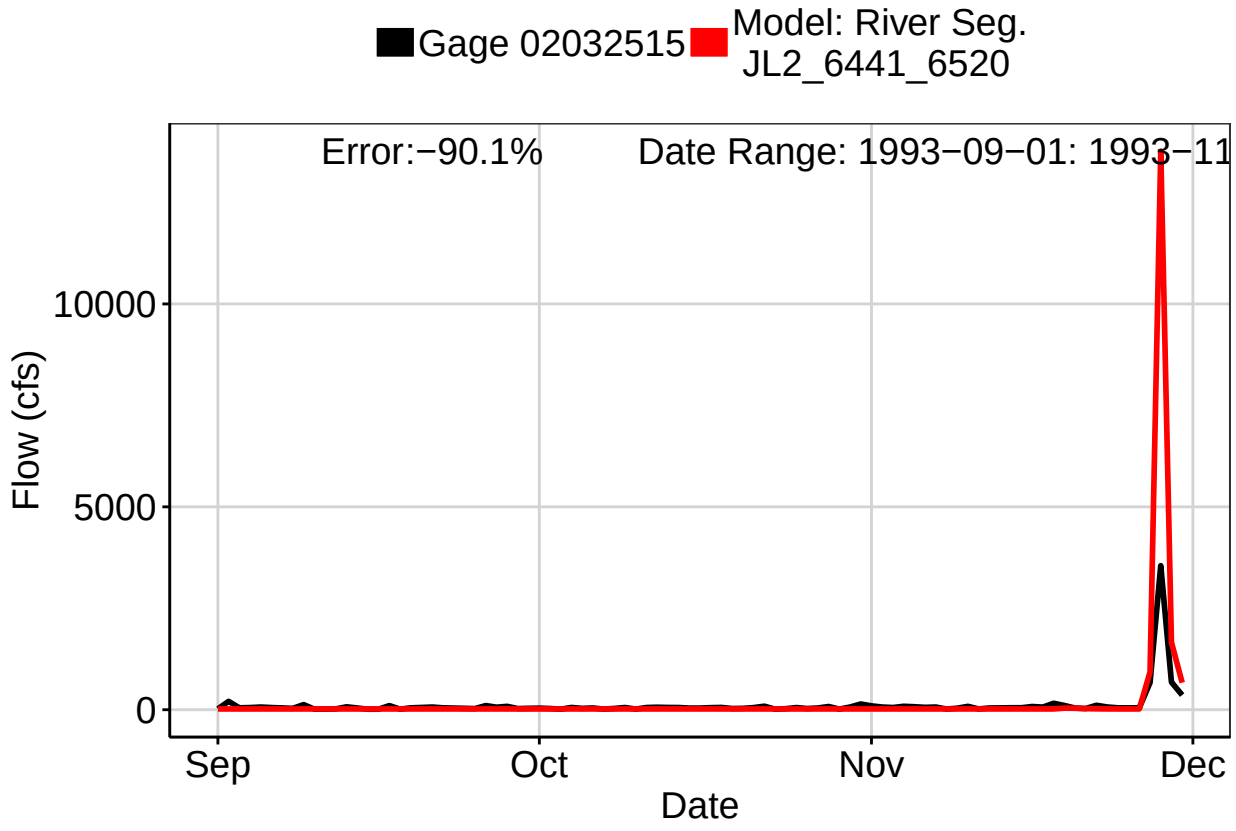


Fig. 9: Residuals Plot