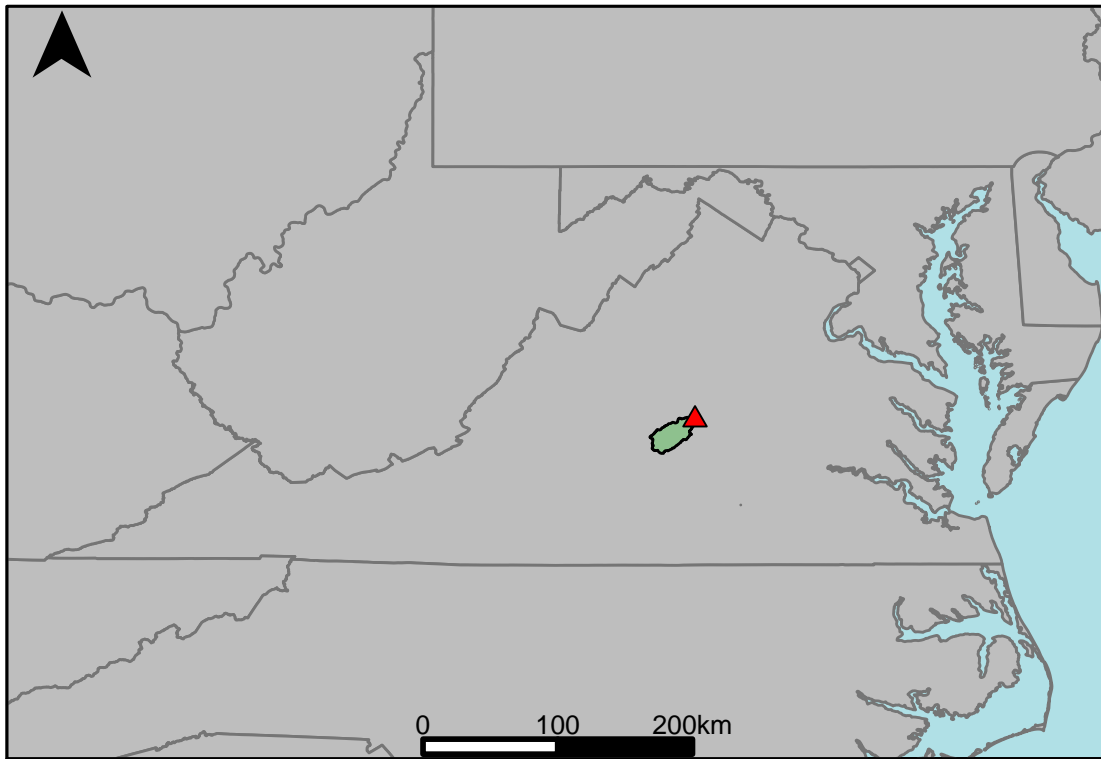


Appendix A.27: USGS Gage 02030500
vs. JL2_7110_7120
Lower James River



This river segment follows part of the flow of the Slate River, a tributary of the James. The gage is located in Buckingham County (Lat. $37^{\circ}42'10.5''$, Long. $-78^{\circ}22'40.0''$), approximately 12 miles southwest of Columbia, VA. Drainage area is 226 sq. miles. This gage started taking data in 1926 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 1.44%, with 68.3% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	43.5	23.8	-45.3
Feb. Low Flow	71	36	-49.3
Mar. Low Flow	93	80.2	-13.8
Apr. Low Flow	115	121	5.22
May Low Flow	140	174	24.3
Jun. Low Flow	140	156	11.4
Jul. Low Flow	124	105	-15.3
Aug. Low Flow	96	73.1	-23.9
Sep. Low Flow	61	50.6	-17
Oct. Low Flow	39.5	30.6	-22.5
Nov. Low Flow	27.8	28.5	2.52
Dec. Low Flow	29	18.6	-35.9

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	208	205	-1.44
Jan. Mean Flow	265	277	4.53
Feb. Mean Flow	299	341	14
Mar. Mean Flow	404	474	17.3
Apr. Mean Flow	267	276	3.37
May Mean Flow	244	235	-3.69
Jun. Mean Flow	144	147	2.08
Jul. Mean Flow	118	97.5	-17.4
Aug. Mean Flow	115	84.1	-26.9
Sep. Mean Flow	126	73.8	-41.4
Oct. Mean Flow	104	86.2	-17.1
Nov. Mean Flow	242	228	-5.79
Dec. Mean Flow	209	189	-9.57

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	130	130	0
Feb. High Flow	851	635	-25.4
Mar. High Flow	785	623	-20.6
Apr. High Flow	1080	773	-28.4
May High Flow	1210	827	-31.7
Jun. High Flow	2100	2840	35.2
Jul. High Flow	651	705	8.29
Aug. High Flow	627	462	-26.3
Sep. High Flow	320	174	-45.6
Oct. High Flow	349	142	-59.3
Nov. High Flow	258	126	-51.2
Dec. High Flow	93.5	72.5	-22.5

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	7.9	3.81	-51.8
Med. 1 Day Min	24	14.4	-40
Min. 3 Day Min	8.7	4	-54
Med. 3 Day Min	25.3	15.1	-40.3
Min. 7 Day Min	9.74	4.42	-54.6
Med. 7 Day Min	27.6	16.6	-39.9
Min. 30 Day Min	13.4	9.08	-32.2
Med. 30 Day Min	36.9	27.6	-25.2
Min. 90 Day Min	27.1	16	-41
Med. 90 Day Min	73.9	46.1	-37.6
7Q10	11.5	6.78	-41
Year of 90-Day Min. Flow	1986	1986	0
Drought Year Mean	177	163	-7.91
Mean Baseflow	102	102	0

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	7640	13200	72.8
Med. 1 Day Max	3120	2840	-8.97
Max. 3 Day Max	4810	5980	24.3
Med. 3 Day Max	1730	1720	-0.58
Max. 7 Day Max	2920	2850	-2.4
Med. 7 Day Max	1120	1060	-5.36
Max. 30 Day Max	1070	1390	29.9
Med. 30 Day Max	456	486	6.58
Max. 90 Day Max	679	901	32.7
Med. 90 Day Max	341	391	14.7

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	13.9	7.89	-43.2
5% Non-Exceedance	27	18.5	-31.5
50% Non-Exceedance	122	101	-17.2
95% Non-Exceedance	622	633	1.77
99% Non-Exceedance	1810	1850	2.21
Sept. 10% Non-Exceedance	22	16.1	-26.8

Fig. 1: Hydrograph

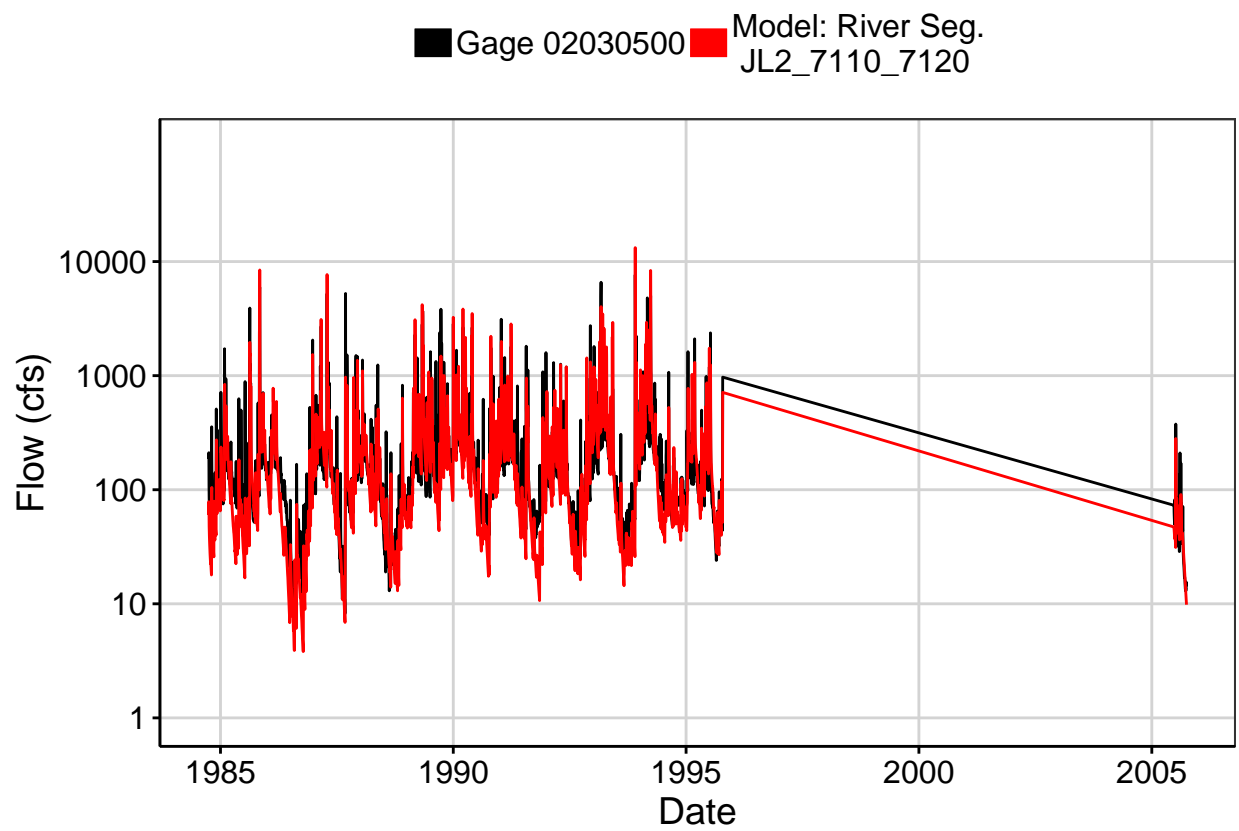


Fig. 2: Zoomed Hydrograph

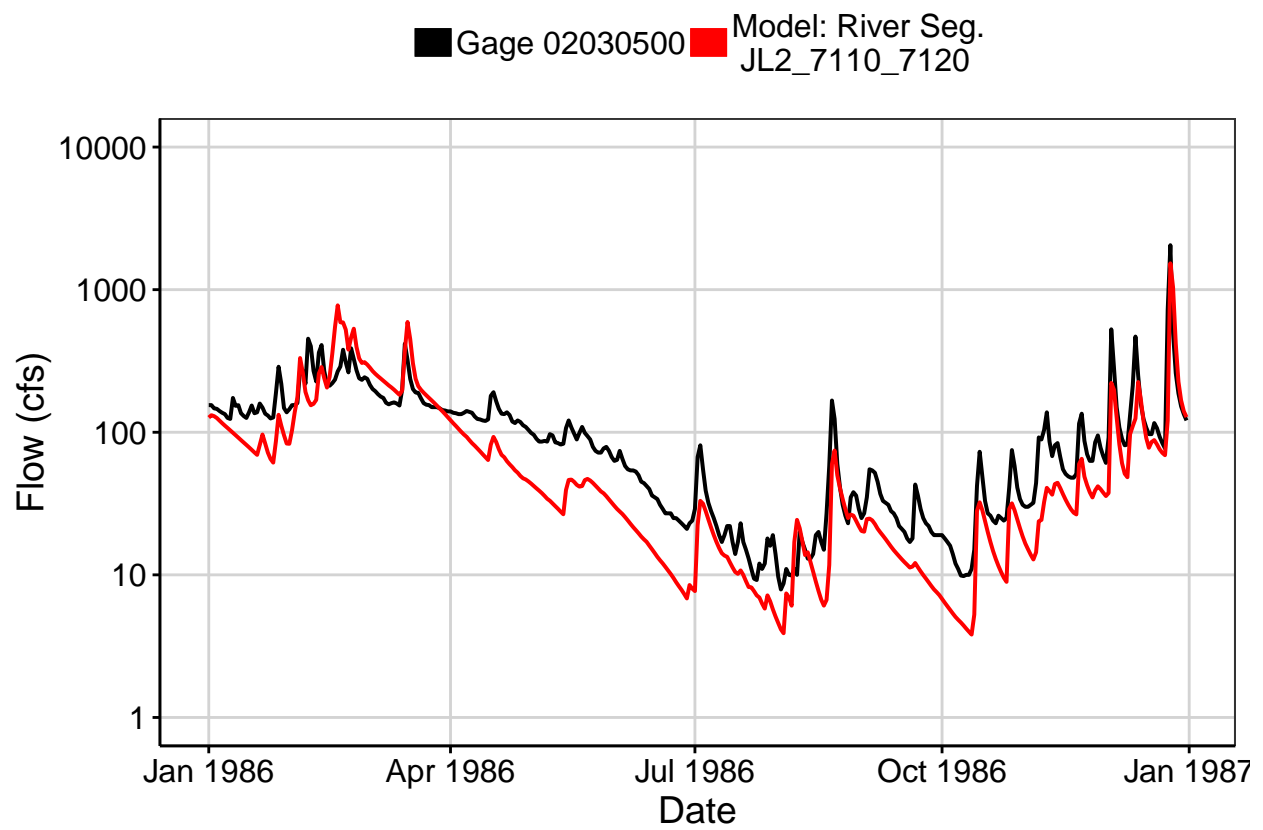


Fig. 3: Flow Exceedance

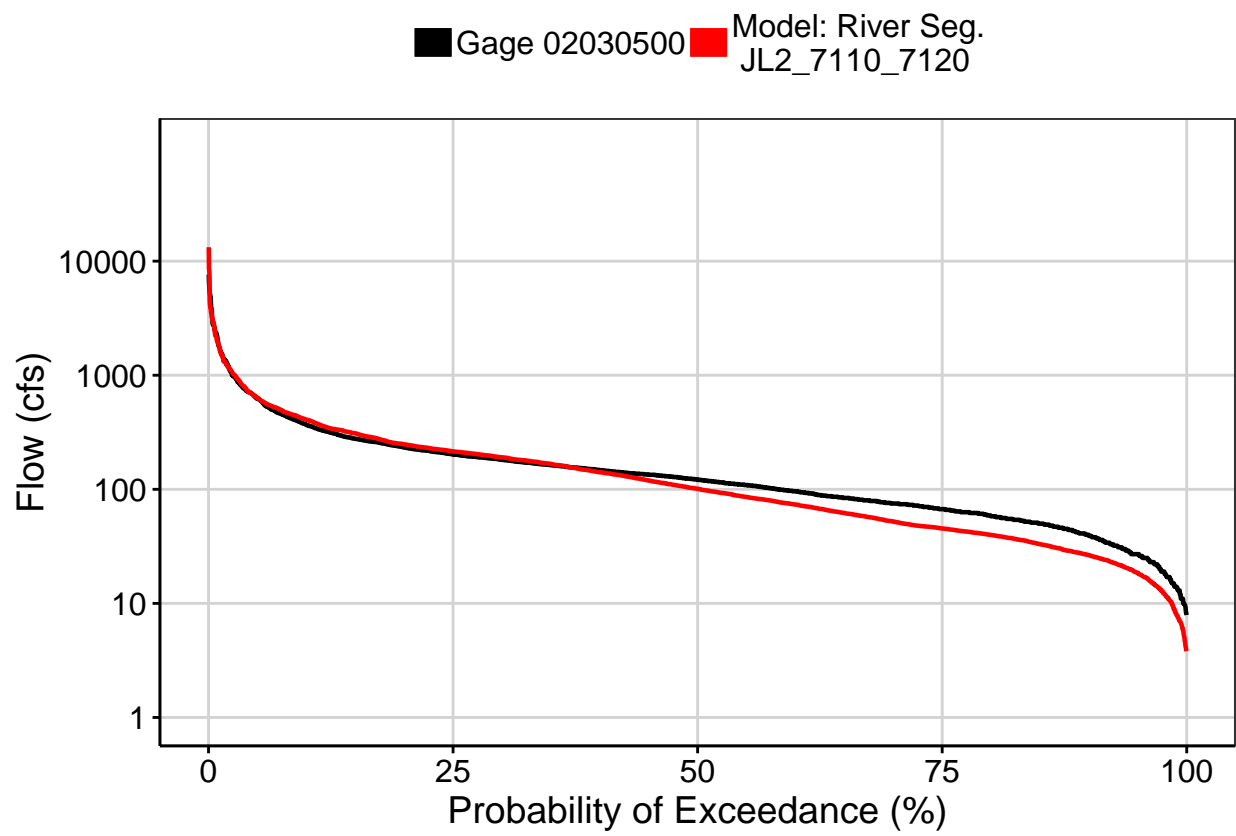


Fig. 4: Baseflow

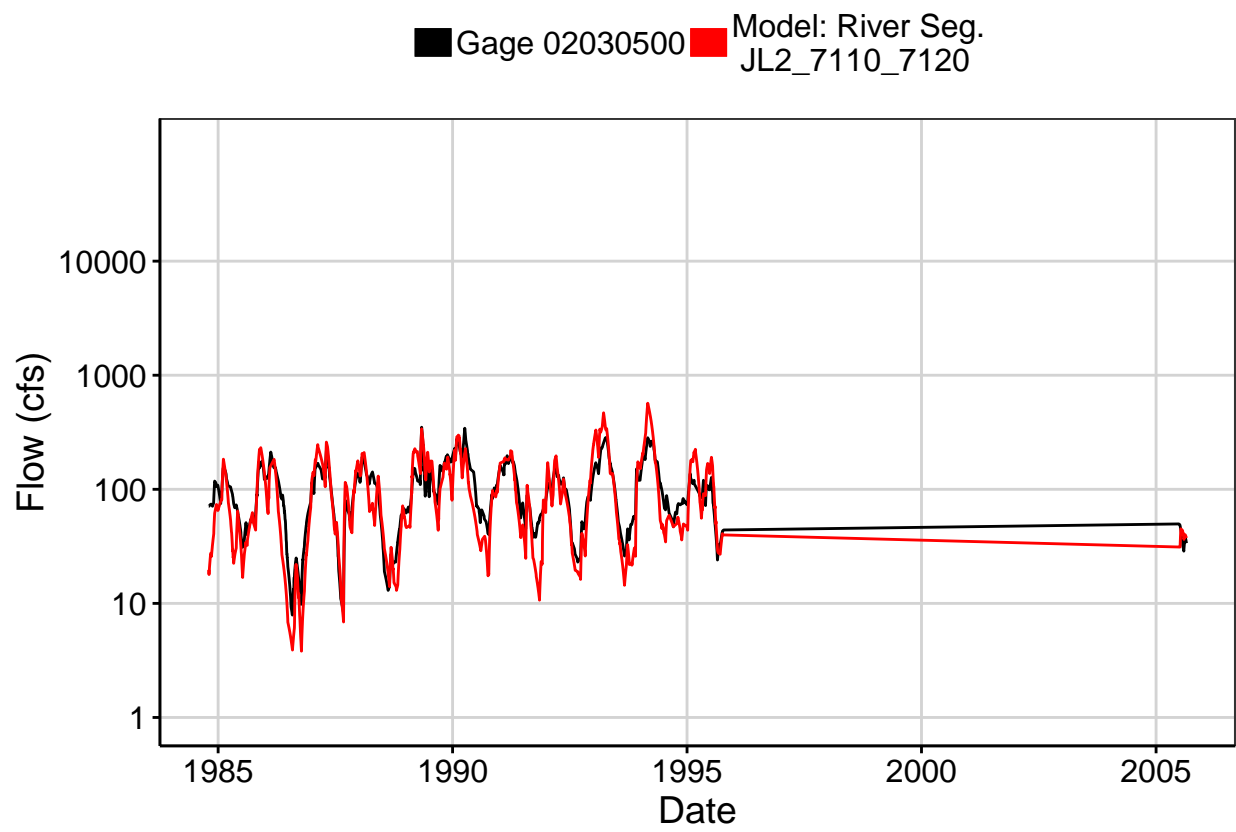


Fig. 5: Combined Baseflow

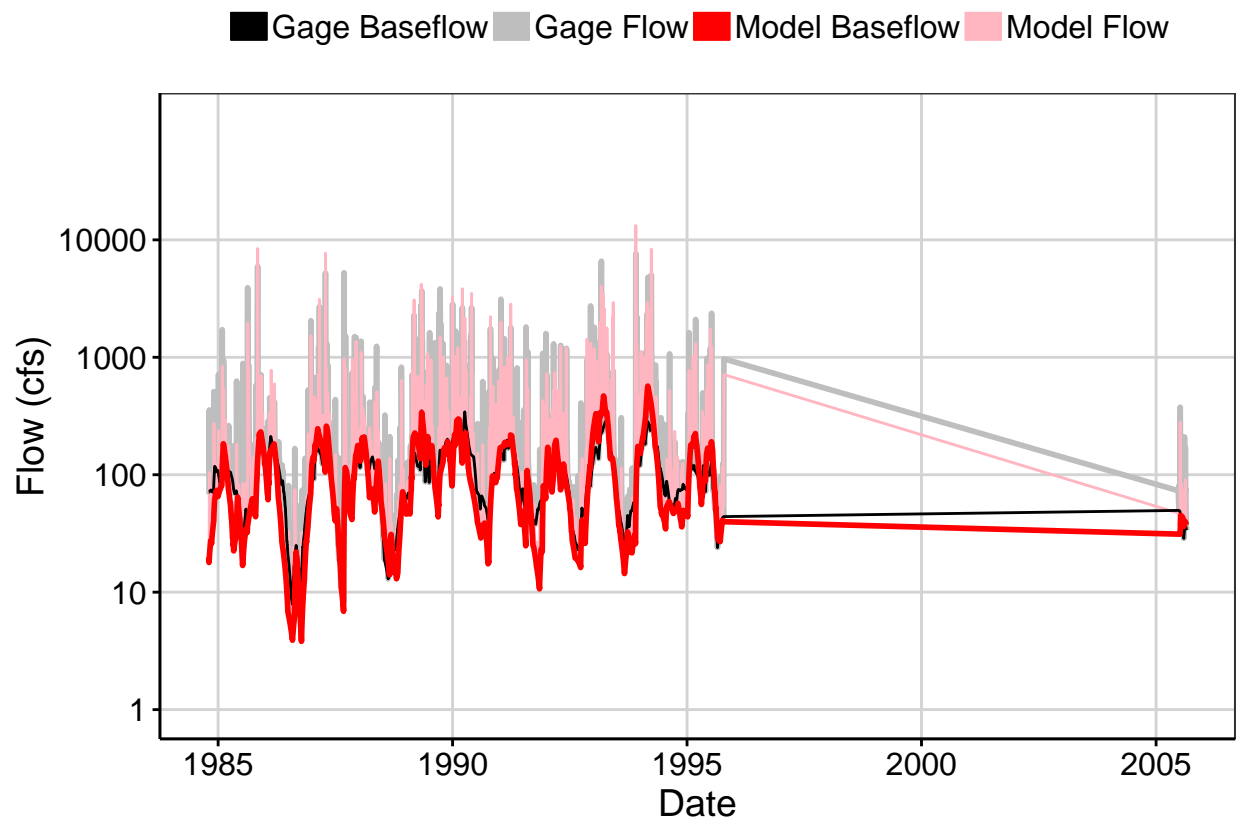


Fig. 6: Largest Error Segment

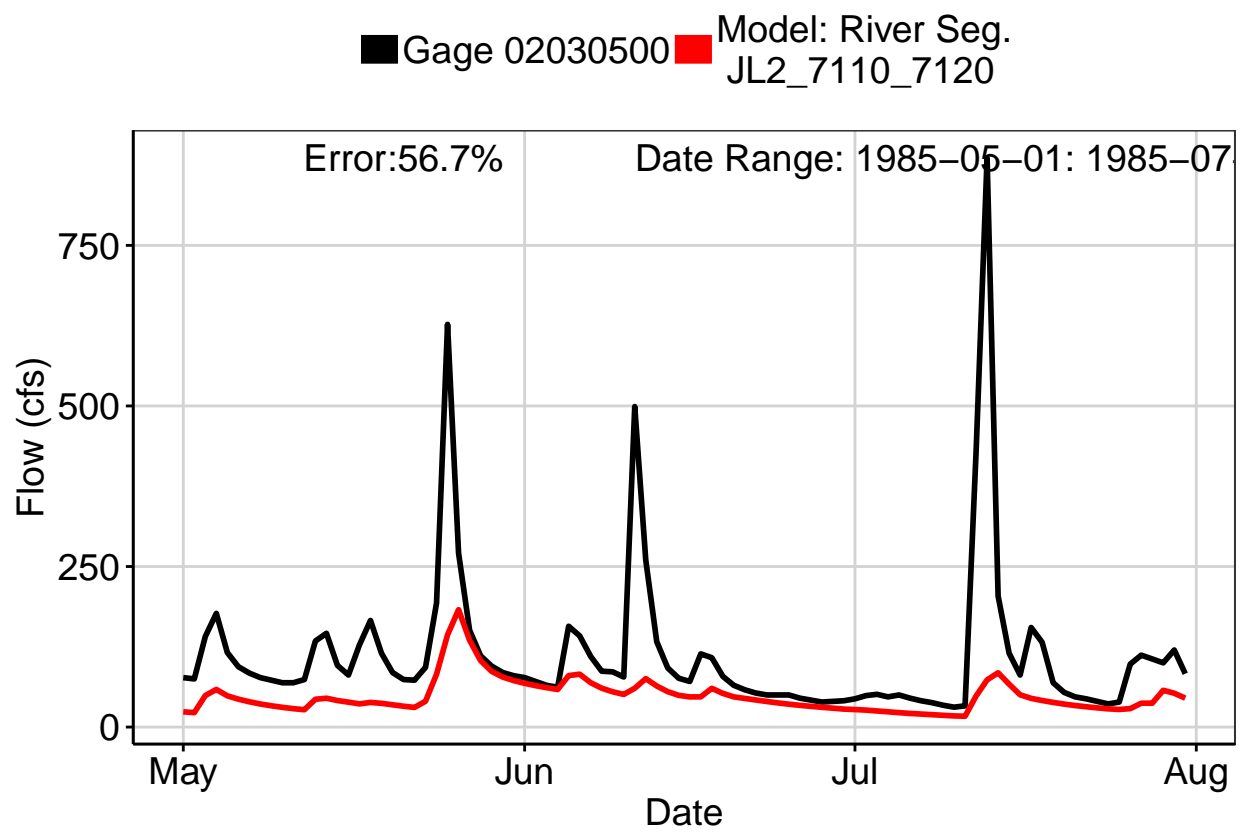


Fig. 7: Second Largest Error Segment

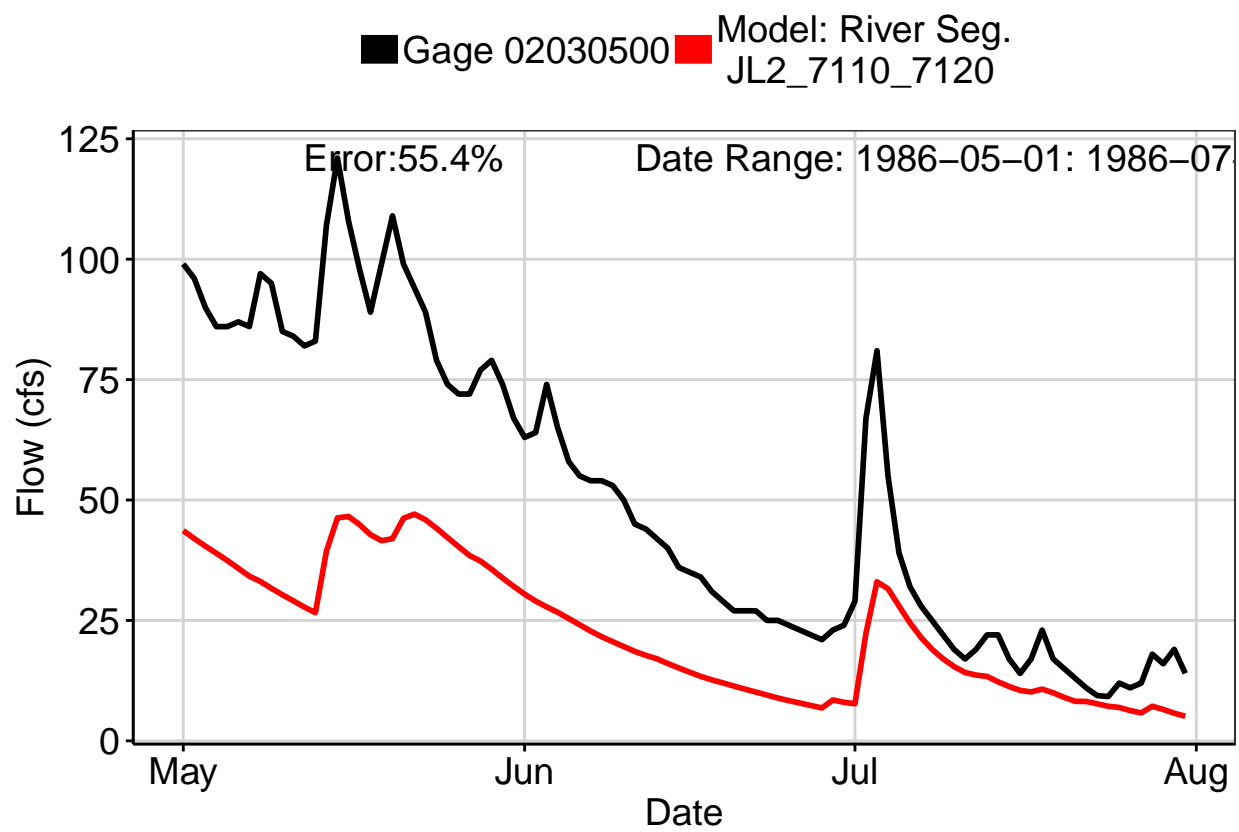


Fig. 8: Third Largest Error Segment

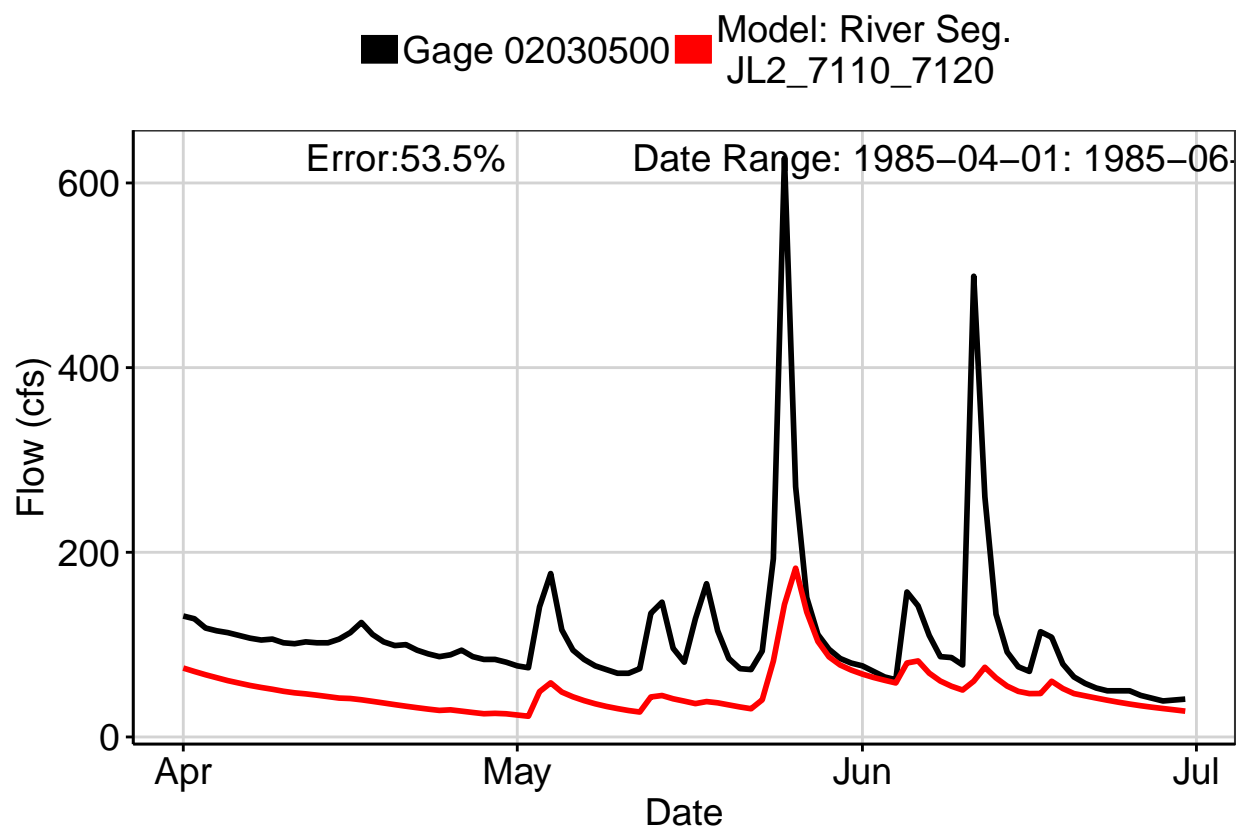


Fig. 9: Residuals Plot

