03471500 vs. TU2_8950_9040

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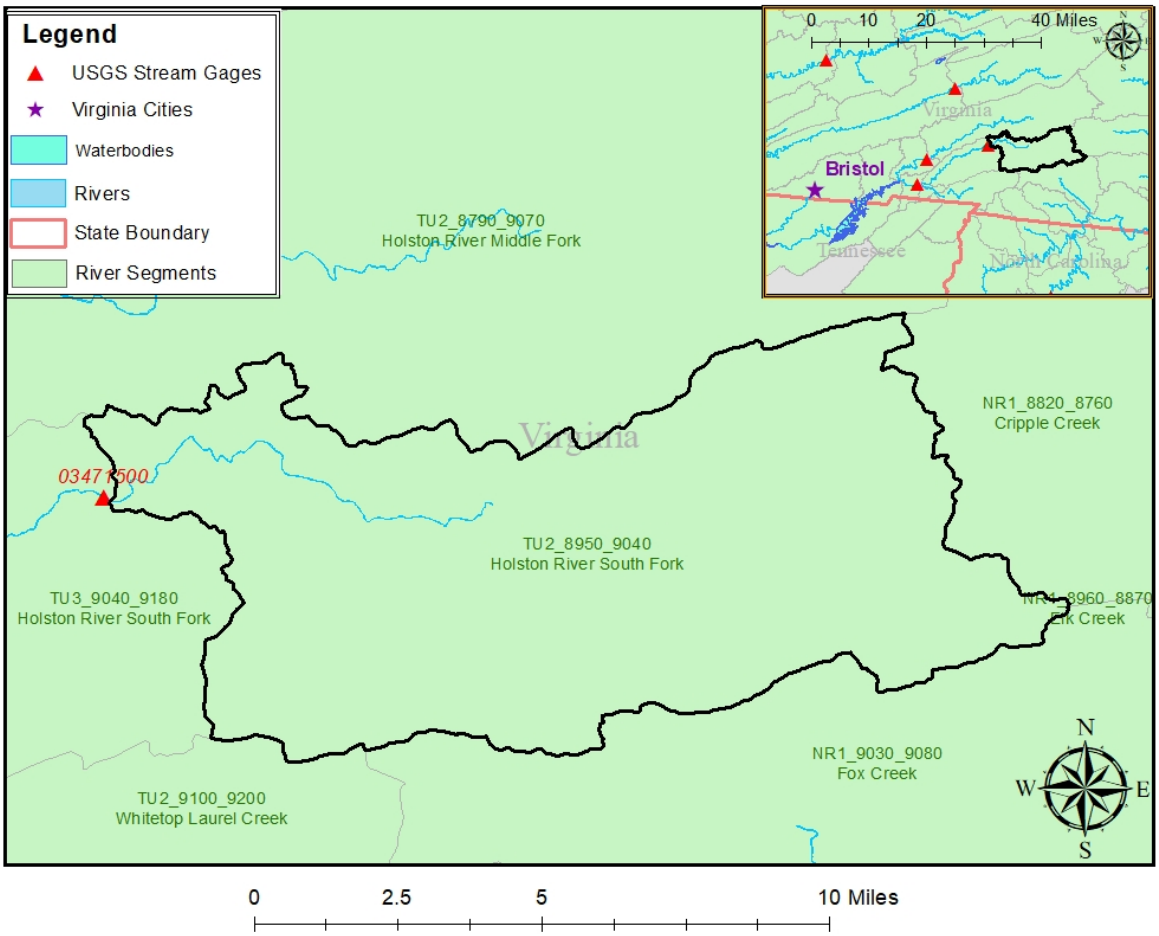

This river segment follows part of the flow of the South Fork of the Holston River, a tributary of the Tennessee River. The gage is located in Smyth County, VA (Lat 3645'37", Long 8137'53") approximately 33 miles northeast of Bristol, VA. Drainage area is 76.6 sq. miles. This gage started taking data in 1920 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 1.83%, with 45.4% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	25	18.6	25.6
Feb. Low Flow	30	30.1	-0.33
Mar. Low Flow	42	44	-4.76
Apr. Low Flow	47	55.7	-18.5
May Low Flow	77	67.1	12.9
Jun. Low Flow	92	89.9	2.28
Jul. Low Flow	91	66.6	26.8
Aug. Low Flow	67	47	29.9
Sep. Low Flow	47	33.5	28.7
Oct. Low Flow	35.9	24.5	31.8
Nov. Low Flow	31	26	16.1
Dec. Low Flow	25	22	12

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	109	107	1.83
Jan. Mean Flow	144	140	2.78
Feb. Mean Flow	192	198	-3.12
Mar. Mean Flow	197	202	-2.54
Apr. Mean Flow	169	149	11.8
May Mean Flow	131	103	21.4
Jun. Mean Flow	96.9	84.8	12.5
Jul. Mean Flow	70.6	60.8	13.9
Aug. Mean Flow	54.1	60.9	-12.6
Sep. Mean Flow	51.7	54.4	-5.22
Oct. Mean Flow	42.8	57.5	-34.3
Nov. Mean Flow	68.2	79.4	-16.4
Dec. Mean Flow	95.7	105	-9.72

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	47	52.4	-11.5
Feb. High Flow	122	120	1.64
Mar. High Flow	318	186	41.5
Apr. High Flow	439	430	2.05
May High Flow	524	560	-6.87
Jun. High Flow	730	569	22.1
Jul. High Flow	322	316	1.86
Aug. High Flow	356	238	33.1
Sep. High Flow	203	143	29.6
Oct. High Flow	105	104	0.95
Nov. High Flow	69	80.1	-16.1
Dec. High Flow	53	75.6	-42.6

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	16	2.5	84.4
Med. 1 Day Min	22	9.48	56.9
Min. 3 Day Min	16	2.68	83.2
Med. 3 Day Min	22.7	10.8	52.4
Min. 7 Day Min	16.6	3.02	81.8
Med. 7 Day Min	22.9	12.3	46.3
Min. 30 Day Min	17.3	7	59.5
Med. 30 Day Min	25.9	17.3	33.2
Min. 90 Day Min	20.2	21.1	-4.46
Med. 90 Day Min	34.2	35.2	-2.92
7Q10	19.1	5.51	71.2
Year of 90-Day Min. Flow	1988	1988	0
Drought Year Mean	53.8	48.4	10
Mean Baseflow	62.1	62.1	0

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	3780	2340	38.1
Med. 1 Day Max	1470	1250	15
Max. 3 Day Max	2090	1480	29.2
Med. 3 Day Max	900	760	15.6
Max. 7 Day Max	1090	862	20.9
Med. 7 Day Max	556	486	12.6
Max. 30 Day Max	581	560	3.61
Med. 30 Day Max	271	263	2.95
Max. 90 Day Max	377	373	1.06
Med. 90 Day Max	207	212	-2.42

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	20	8.81	56
5% Non-Exceedance	23	15.7	31.7
50% Non-Exceedance	68	70.2	-3.24
95% Non-Exceedance	308	291	5.52
99% Non-Exceedance	686	650	5.25
Sept. 10% Non-Exceedance	13.2	22	-66.7

Fig. 1: Hydrograph

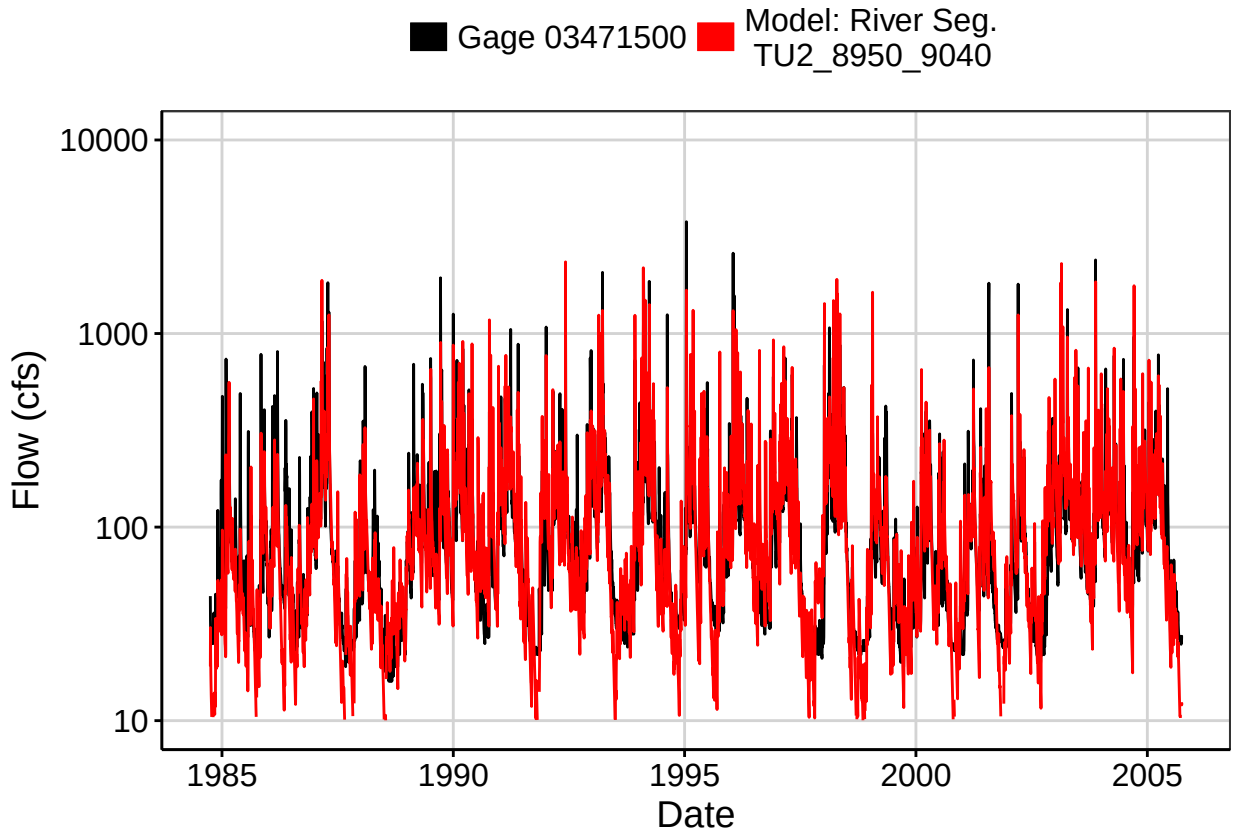

Fig. 2: Zoomed Hydrograph

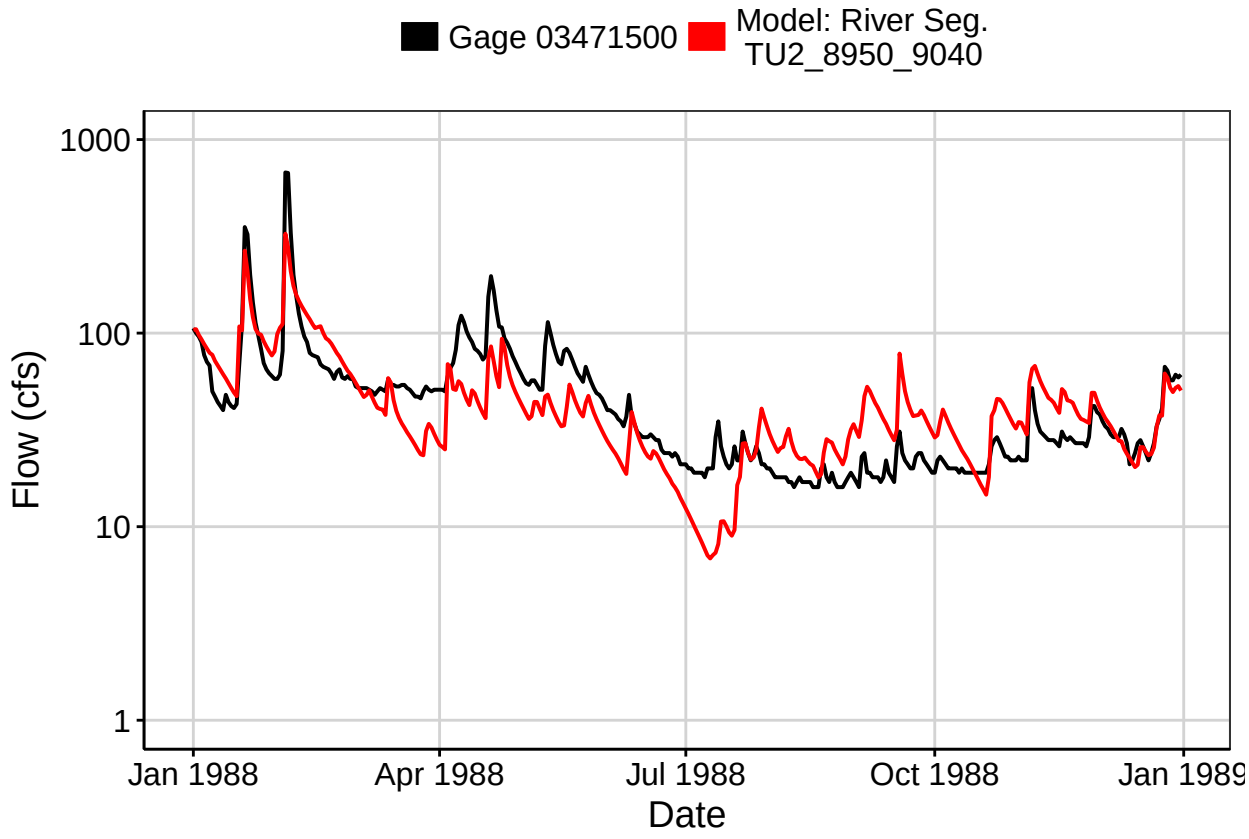

Fig. 3: Flow Exceedance

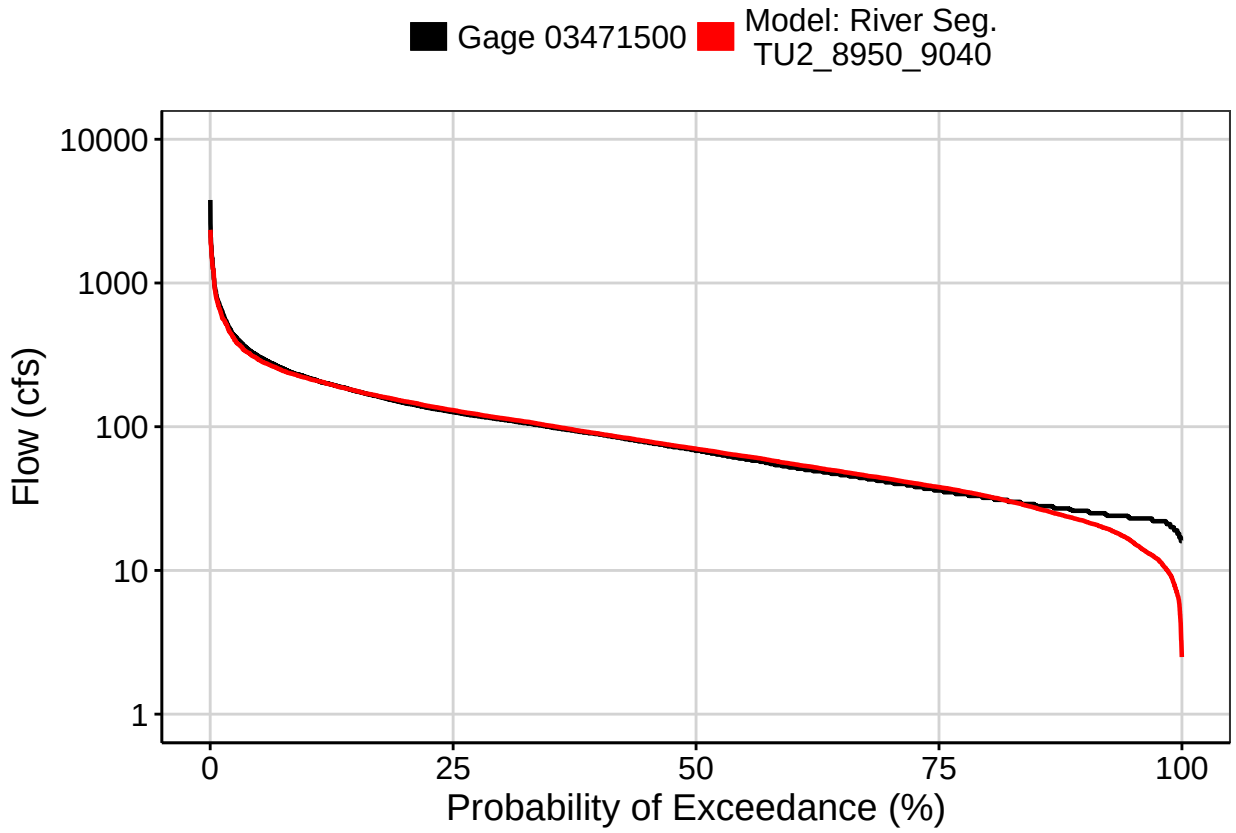

Fig. 4: Baseflow

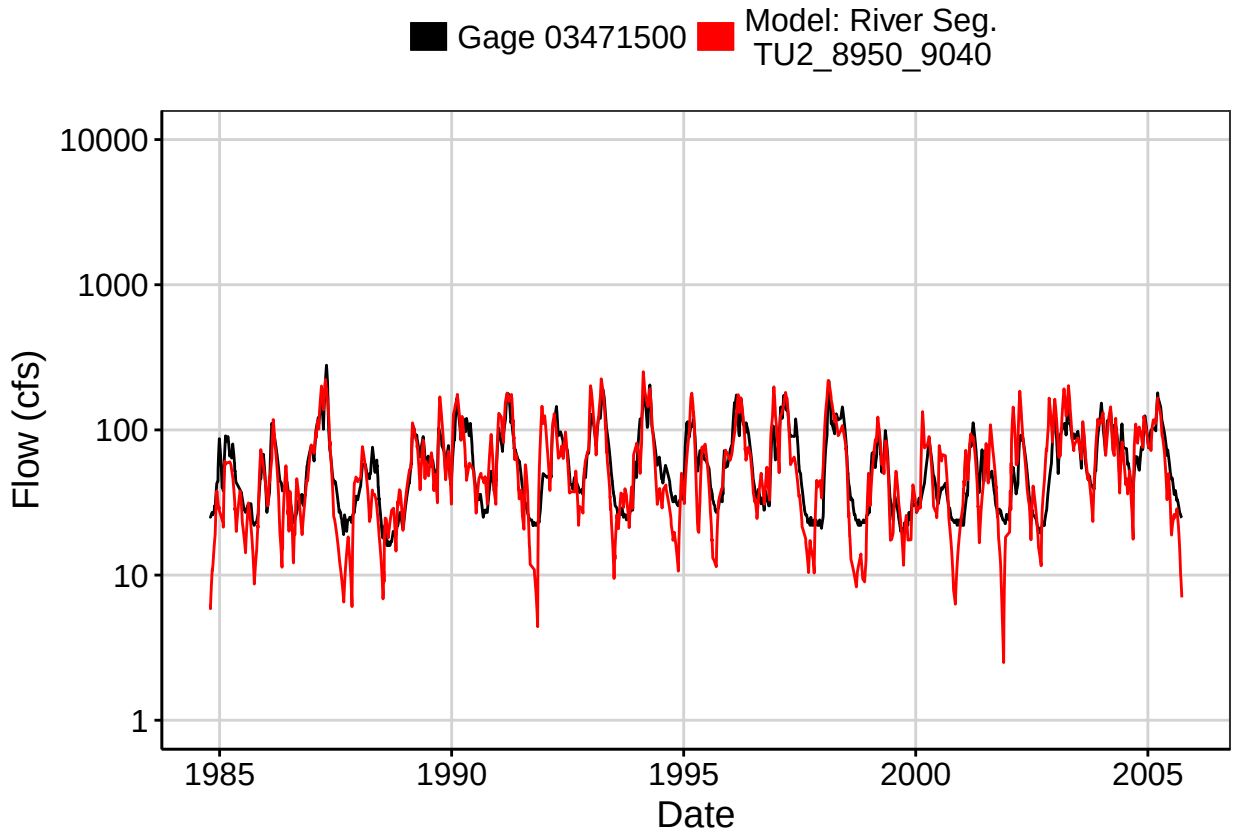

Fig. 5: Combined Baseflow

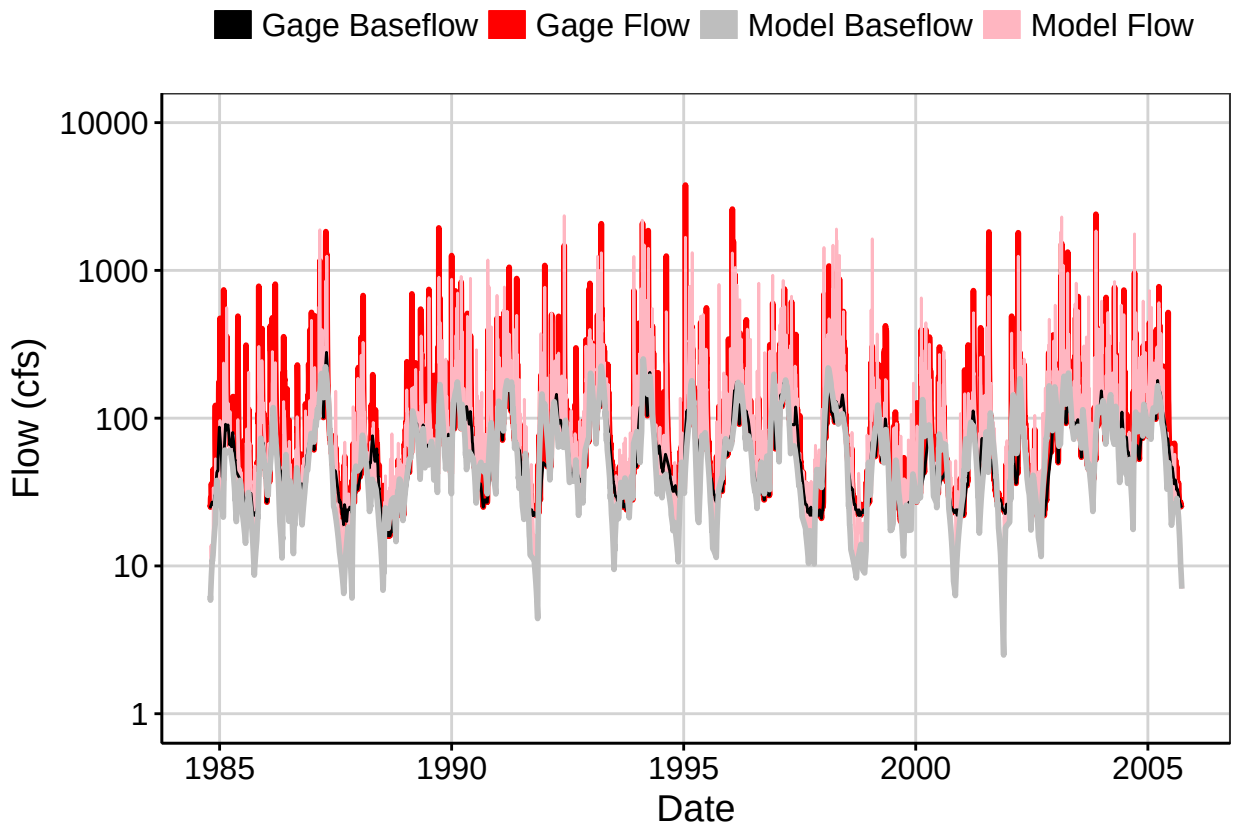

Fig. 6: Largest Error Segment

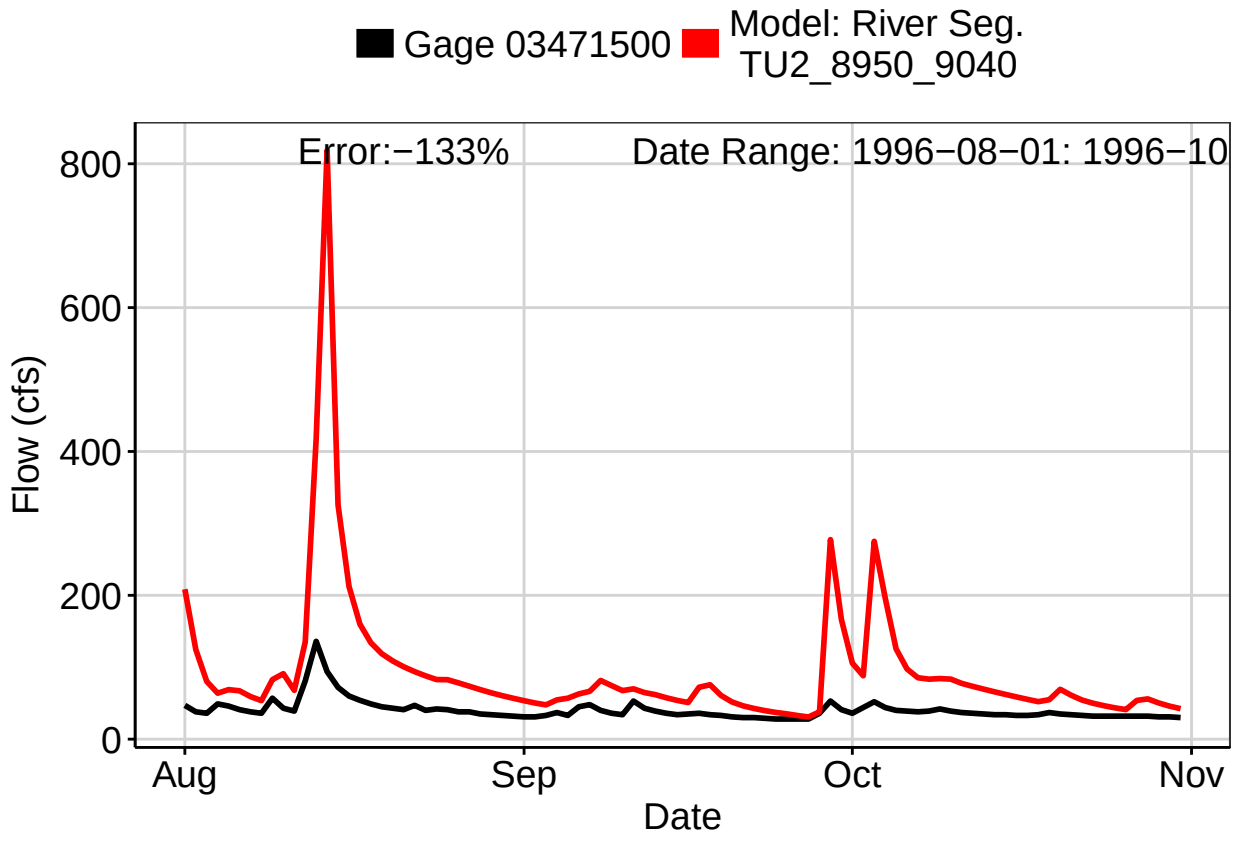

Fig. 7: Second Largest Error Segment

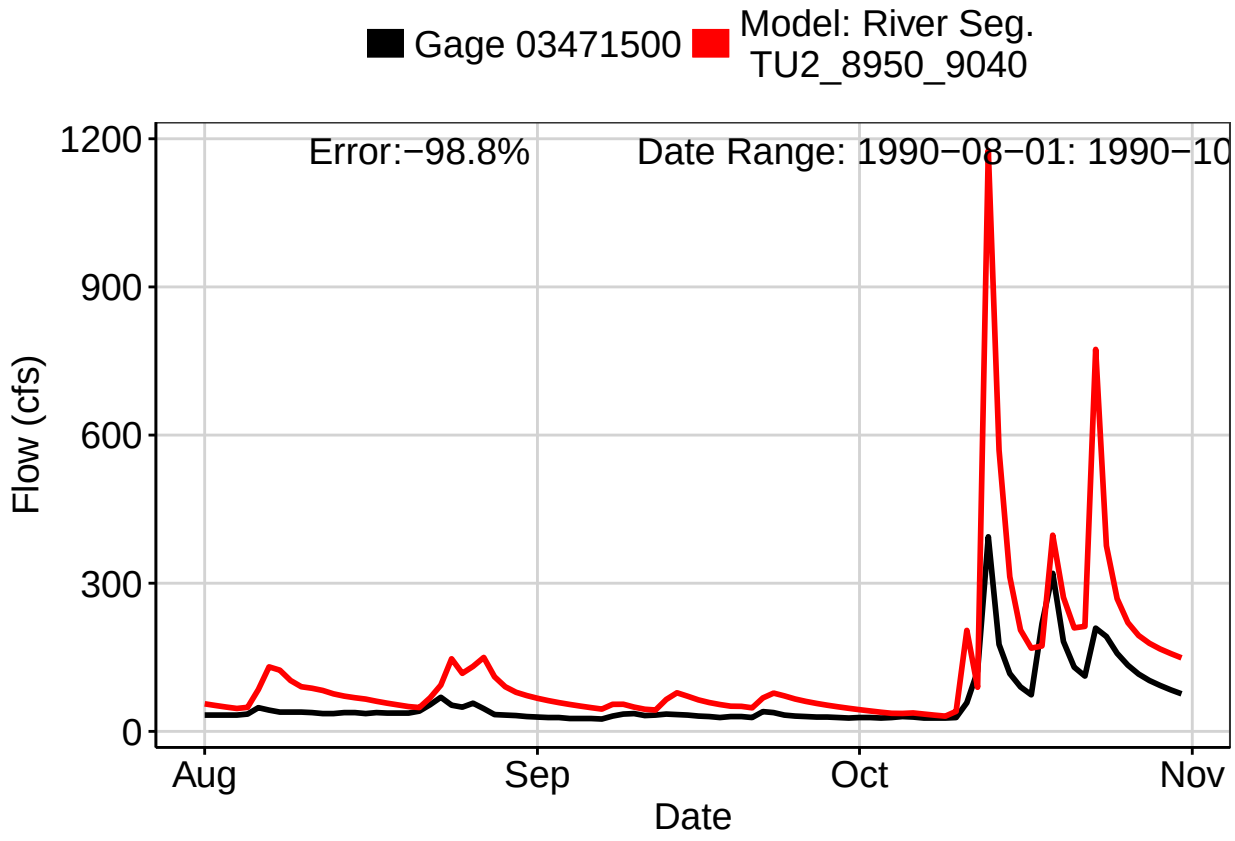

Fig. 8: Third Largest Error Segment

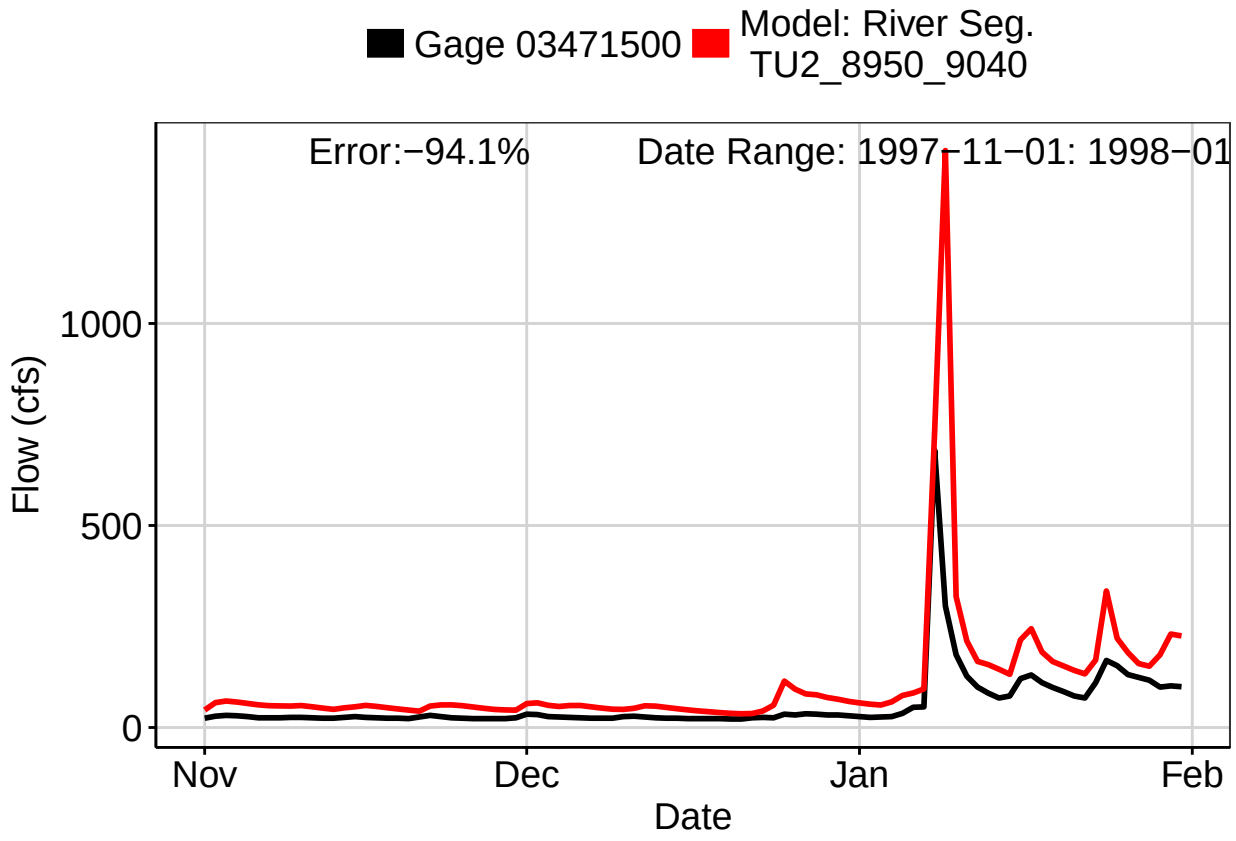

Fig. 9: Residuals Plot