02054530 vs. OR2_8130_7900

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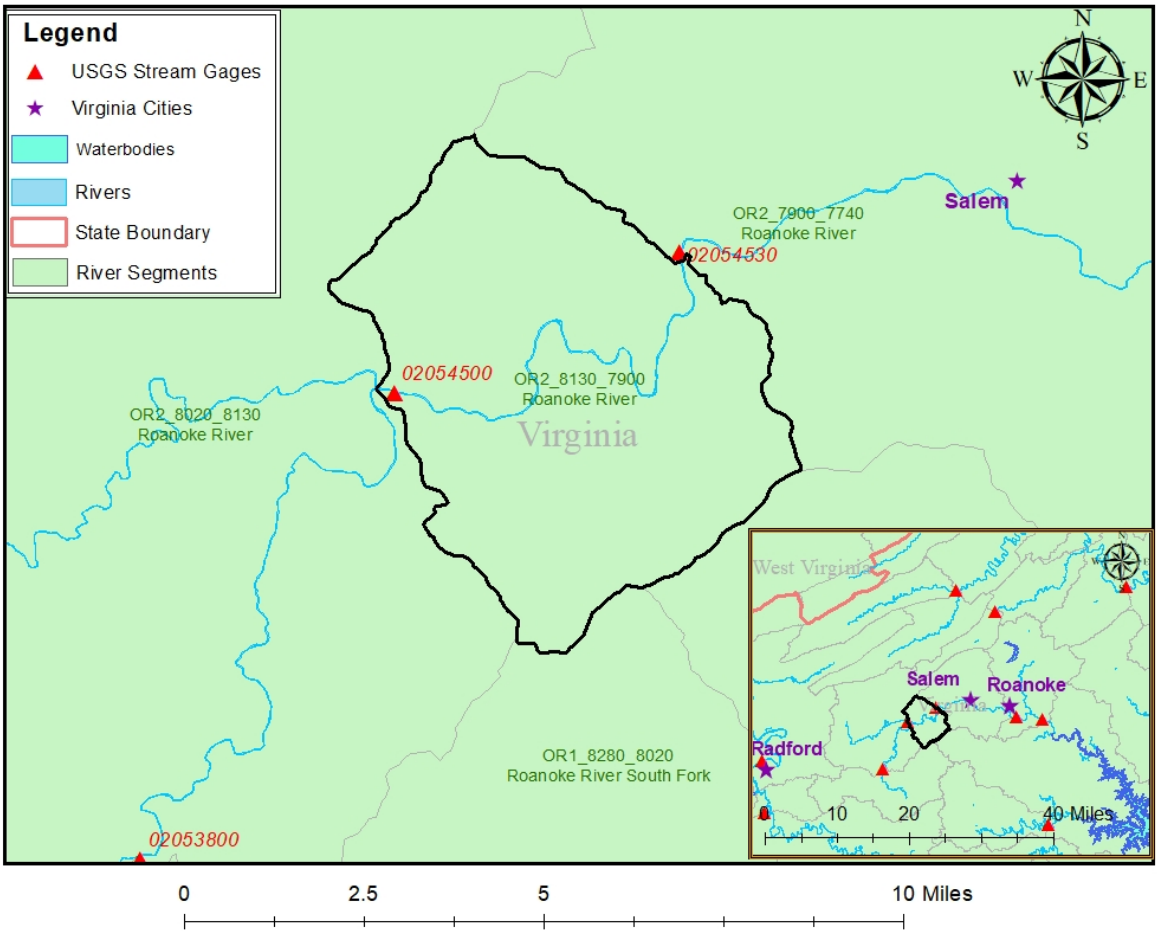

This river segment follows part of the flow of the Roanoke River. The gage is located in Roanoke County, VA (Lat 3716'04", Long 8008'23") approximately 5 miles southwest of Salem, VA. Drainage area is 281 sq. miles. This gage started taking data in 1991-12-12 and is still taking data. There is frequent pumping from the river into the Spring Hollow Reservoir approximately two miles below Lafayette and seven miles upstream of Glenvar; this diversion of water is significant enough that the Glenvar gage reads lower than the Lafayette gage. The average daily discharge error between the model and gage data for the 20 year timespan was -1.09%, with 38.9% of its rolling three month time spans above 20% error.

Table 1: Monthly Low Flows

	USGS Gage	Model	Pct. Error
Jan. Low Flow	61	42.1	31
Feb. Low Flow	72	55.3	23.2
Mar. Low Flow	83	98.2	-18.3
Apr. Low Flow	85	154	-81.2
May Low Flow	158	239	-51.3
Jun. Low Flow	184	270	-46.7
Jul. Low Flow	181	185	-2.21
Aug. Low Flow	114	155	-36
Sep. Low Flow	99	115	-16.2
Oct. Low Flow	73	75.7	-3.7
Nov. Low Flow	55	58.9	-7.09
Dec. Low Flow	51	37.2	27.1

Table 2: Monthly Average Flows

	USGS Gage	Model	Pct. Error
Overall Mean Flow	276	279	-1.09
Jan. Mean Flow	352	377	-7.1
Feb. Mean Flow	509	507	0.39
Mar. Mean Flow	543	532	2.03
Apr. Mean Flow	402	386	3.98
May Mean Flow	283	293	-3.53
Jun. Mean Flow	255	275	-7.84
Jul. Mean Flow	154	163	-5.84
Aug. Mean Flow	121	128	-5.79
Sep. Mean Flow	195	173	11.3
Oct. Mean Flow	94.6	106	-12.1
Nov. Mean Flow	170	194	-14.1
Dec. Mean Flow	245	237	3.27

Table 3: Monthly High Flows

	USGS Gage	Model	Pct. Error
Jan. High Flow	186	158	15.1
Feb. High Flow	260	545	-110
Mar. High Flow	604	292	51.7
Apr. High Flow	1180	1500	-27.1
May High Flow	1100	1610	-46.4
Jun. High Flow	1720	2480	-44.2
Jul. High Flow	1080	1120	-3.7
Aug. High Flow	483	794	-64.4
Sep. High Flow	419	582	-38.9
Oct. High Flow	296	262	11.5
Nov. High Flow	173	175	-1.16
Dec. High Flow	134	186	-38.8

Table 4: Period Low Flows

	USGS Gage	Model	Pct. Error
Min. 1 Day Min	15.2	0	100
Med. 1 Day Min	47	29.6	37
Min. 3 Day Min	15.9	0	100
Med. 3 Day Min	47.7	29.9	37.3
Min. 7 Day Min	17.7	0	100
Med. 7 Day Min	50.9	31.5	38.1
Min. 30 Day Min	25.9	0.15	99.4
Med. 30 Day Min	57.9	45.4	21.6
Min. 90 Day Min	34.8	10.7	69.3
Med. 90 Day Min	86	79.7	7.33
7Q10	26.2	0.02	99.9
Year of 90-Day Min. Flow	2002	2002	0
Drought Year Mean	77.6	40.1	48.3
Mean Baseflow	136	156	-14.7

Table 5: Period High Flows

	USGS Gage	Model	Pct. Error
Max. 1 Day Max	10500	7130	32.1
Med. 1 Day Max	5850	3570	39
Max. 3 Day Max	6140	5120	16.6
Med. 3 Day Max	3490	2560	26.6
Max. 7 Day Max	3590	2370	34
Med. 7 Day Max	1880	1570	16.5
Max. 30 Day Max	1750	1330	24
Med. 30 Day Max	769	805	-4.68
Max. 90 Day Max	1020	986	3.33
Med. 90 Day Max	498	491	1.41

Table 6: Non-Exceedance Flows

	USGS Gage	Model	Pct. Error
1% Non-Exceedance	31.5	0	100
5% Non-Exceedance	45.7	11.4	75.1
50% Non-Exceedance	128	156	-21.9
95% Non-Exceedance	841	875	-4.04
99% Non-Exceedance	2470	2260	8.5
Sept. 10% Non-Exceedance	14.7	40.9	-178

Fig. 1: Hydrograph

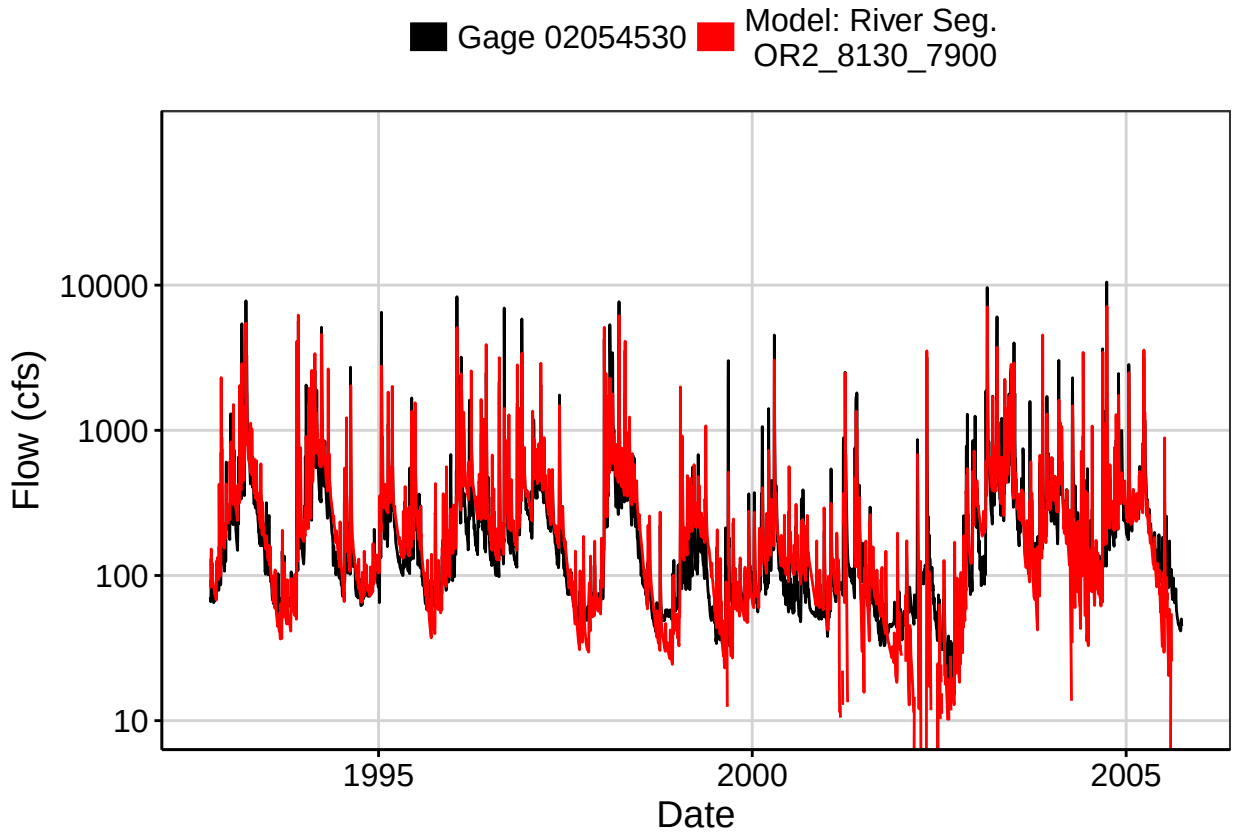

Fig. 2: Zoomed Hydrograph

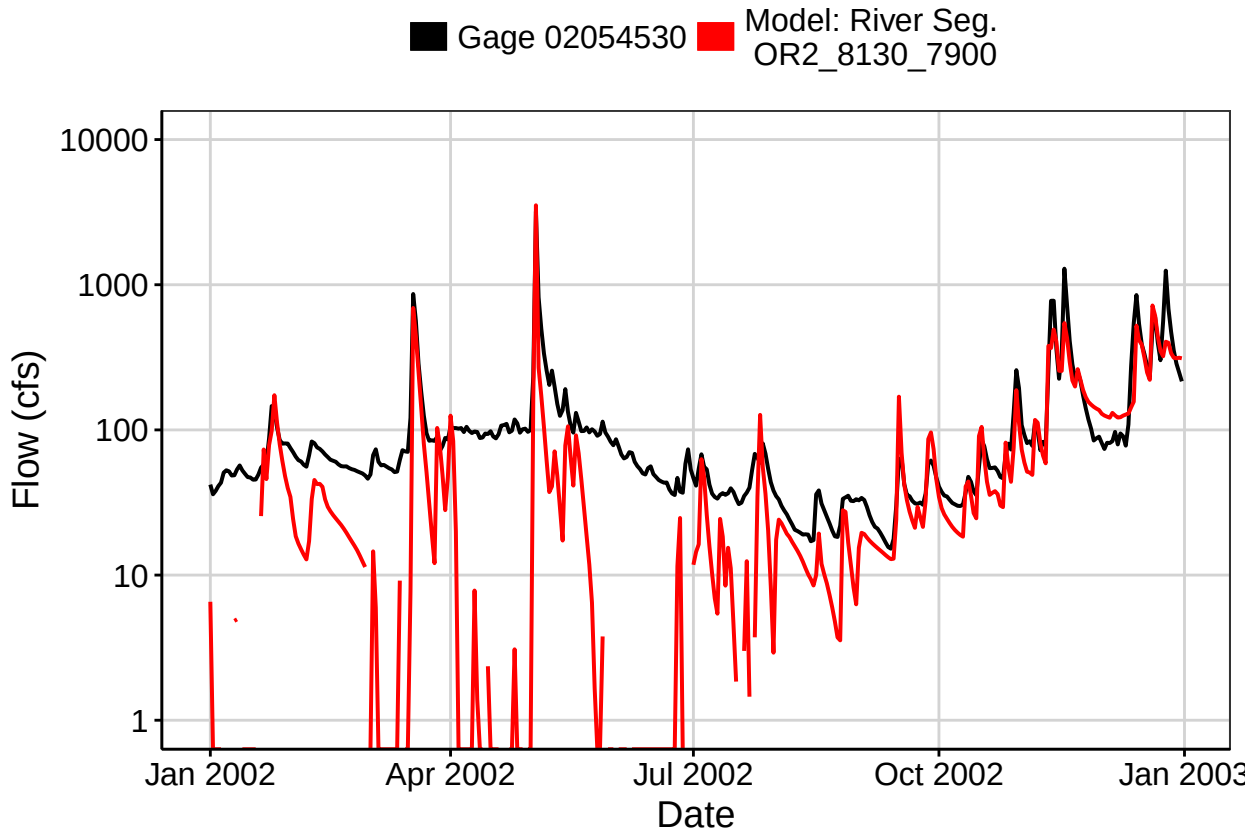

Fig. 3: Flow Exceedance

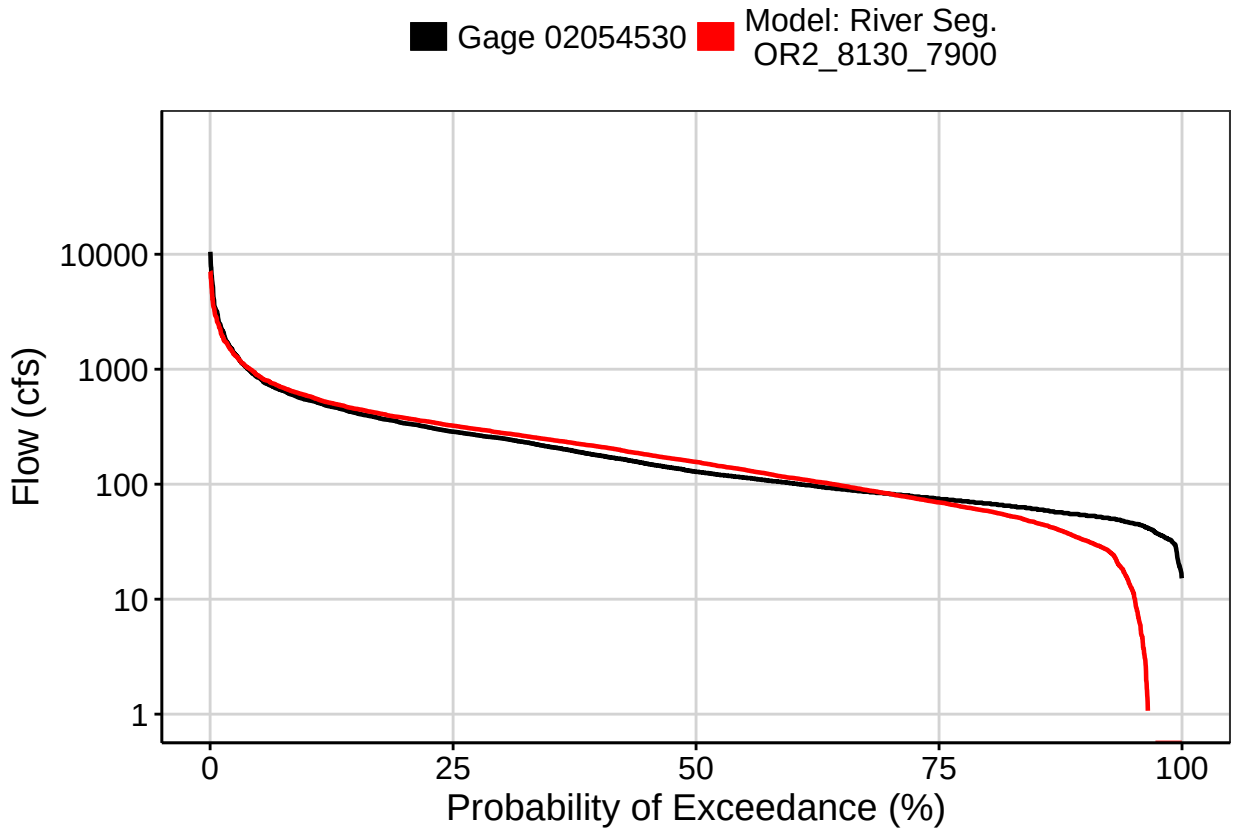

Fig. 4: Baseflow

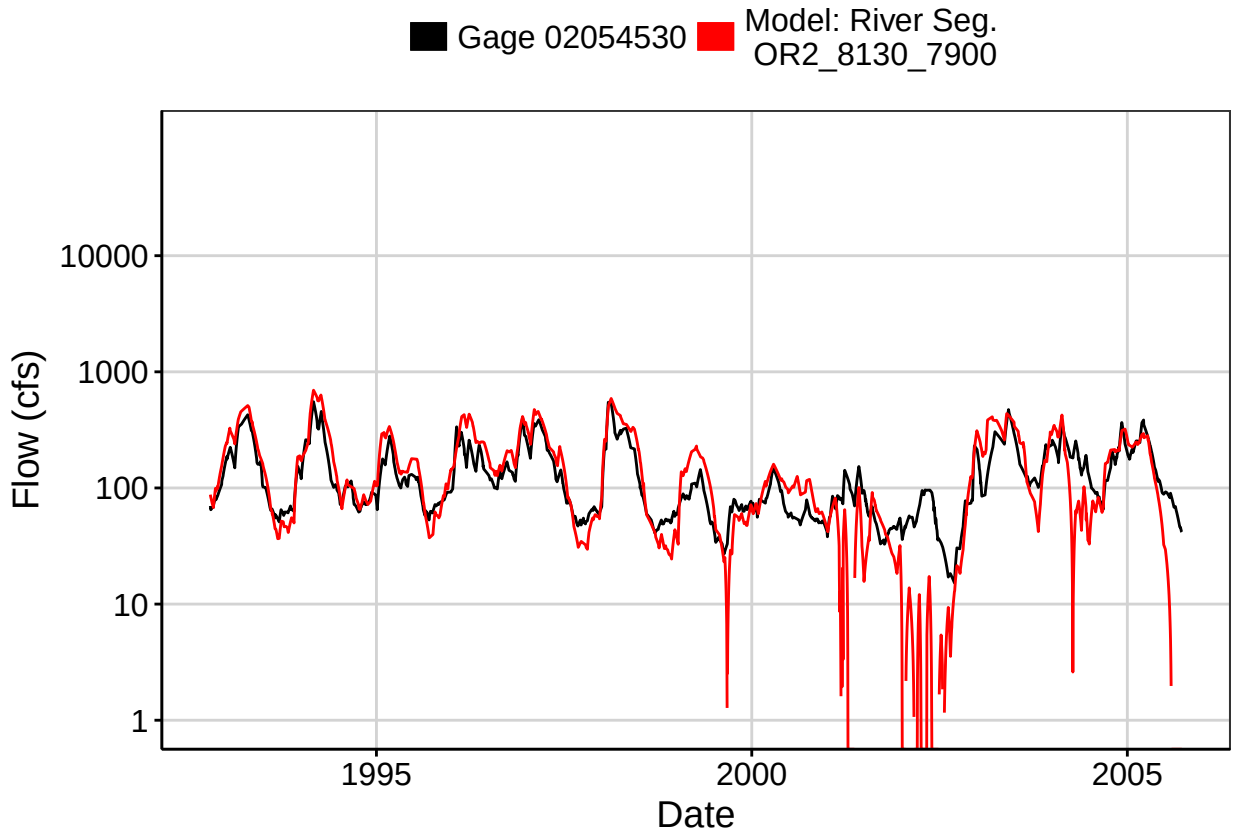

Fig. 5: Combined Baseflow

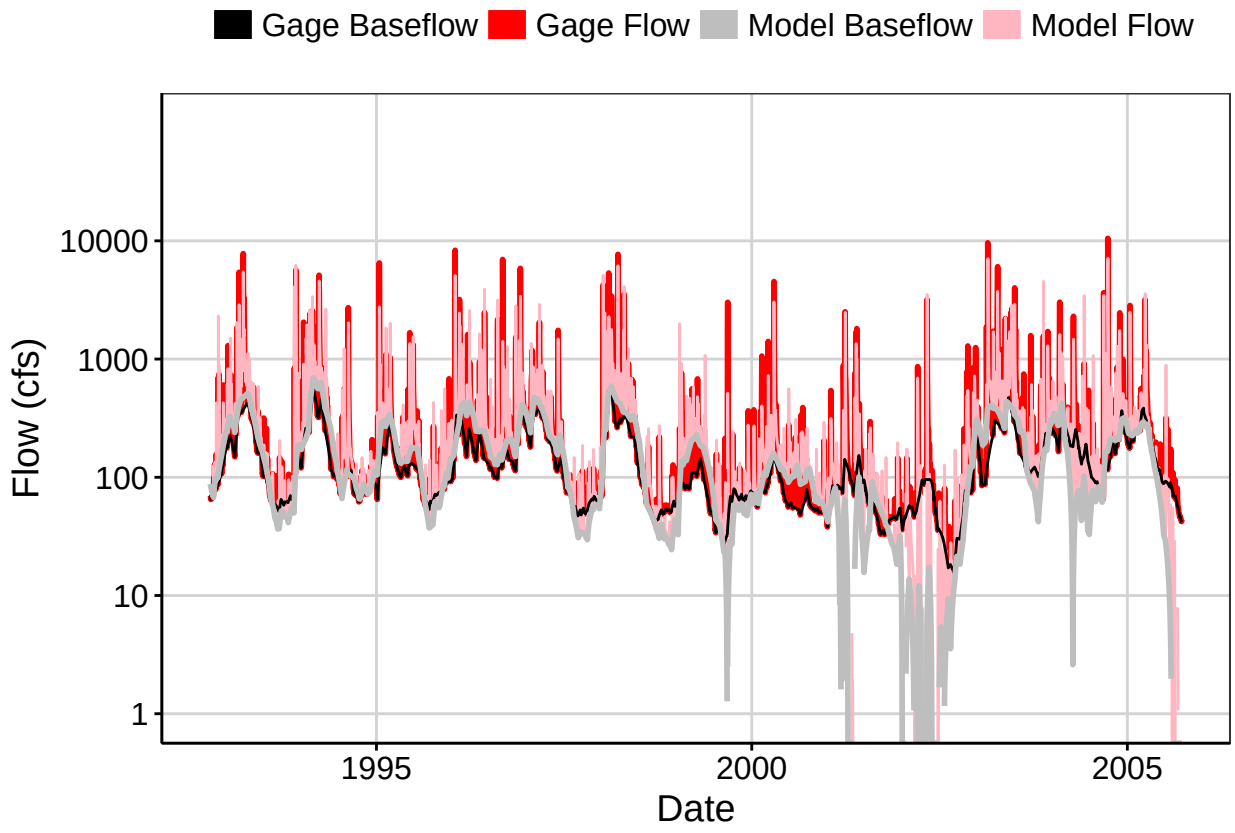

Fig. 6: Largest Error Segment

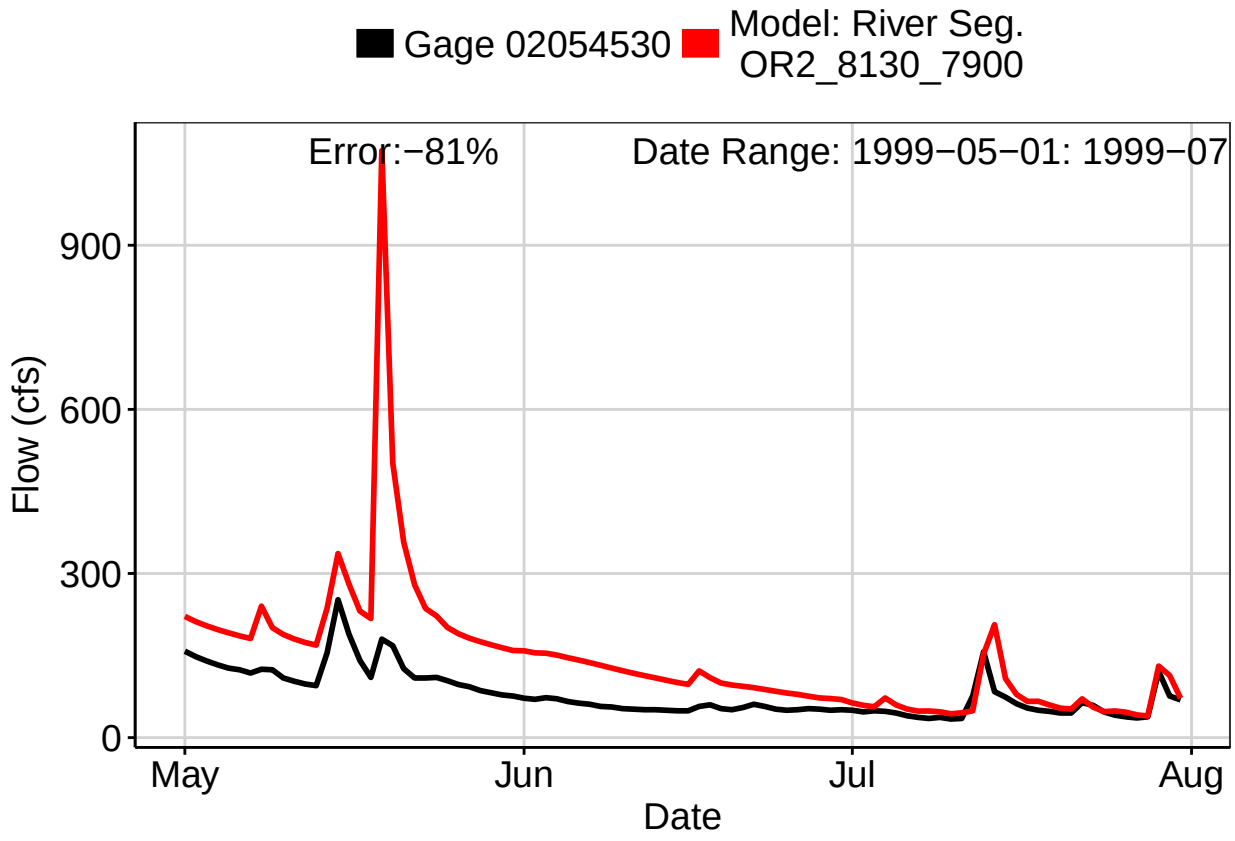

Fig. 7: Second Largest Error Segment

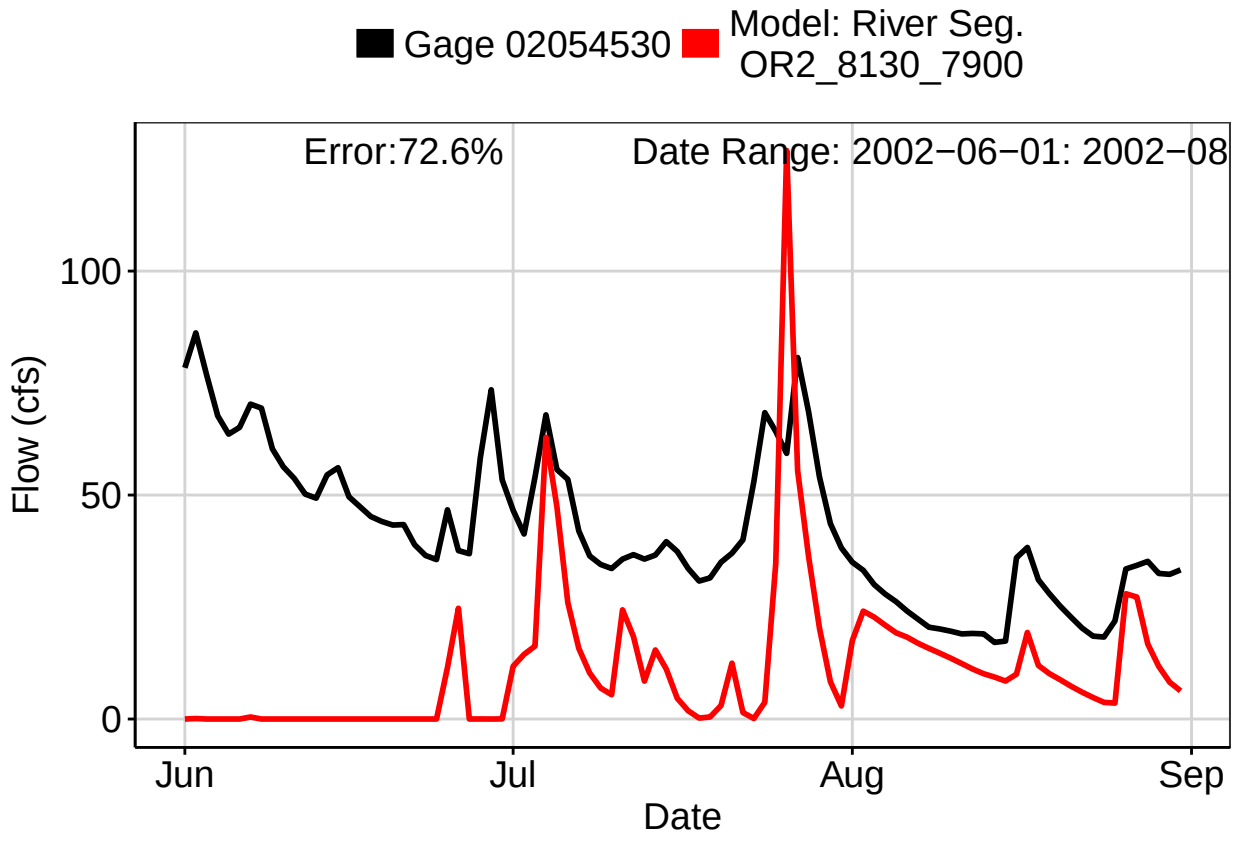

Fig. 8: Third Largest Error Segment

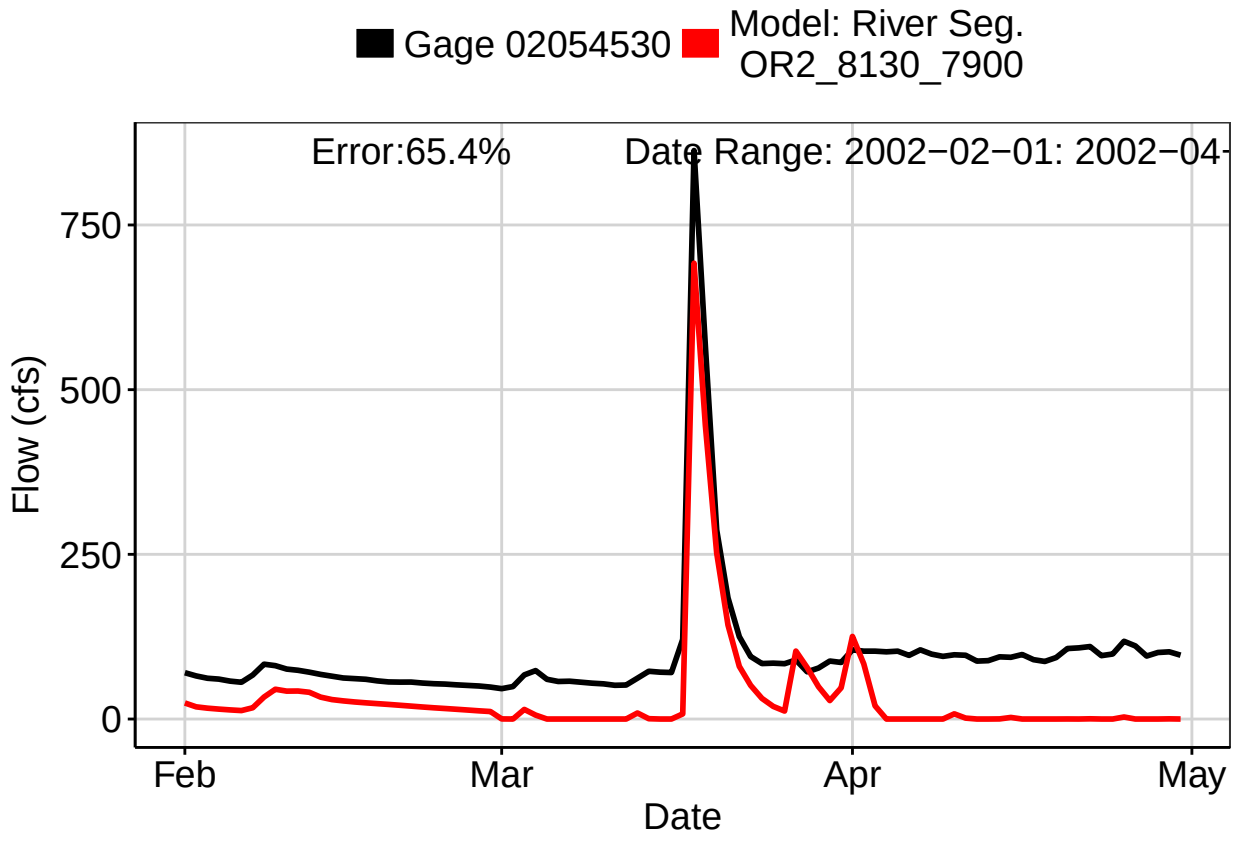

Fig. 9: Residuals Plot