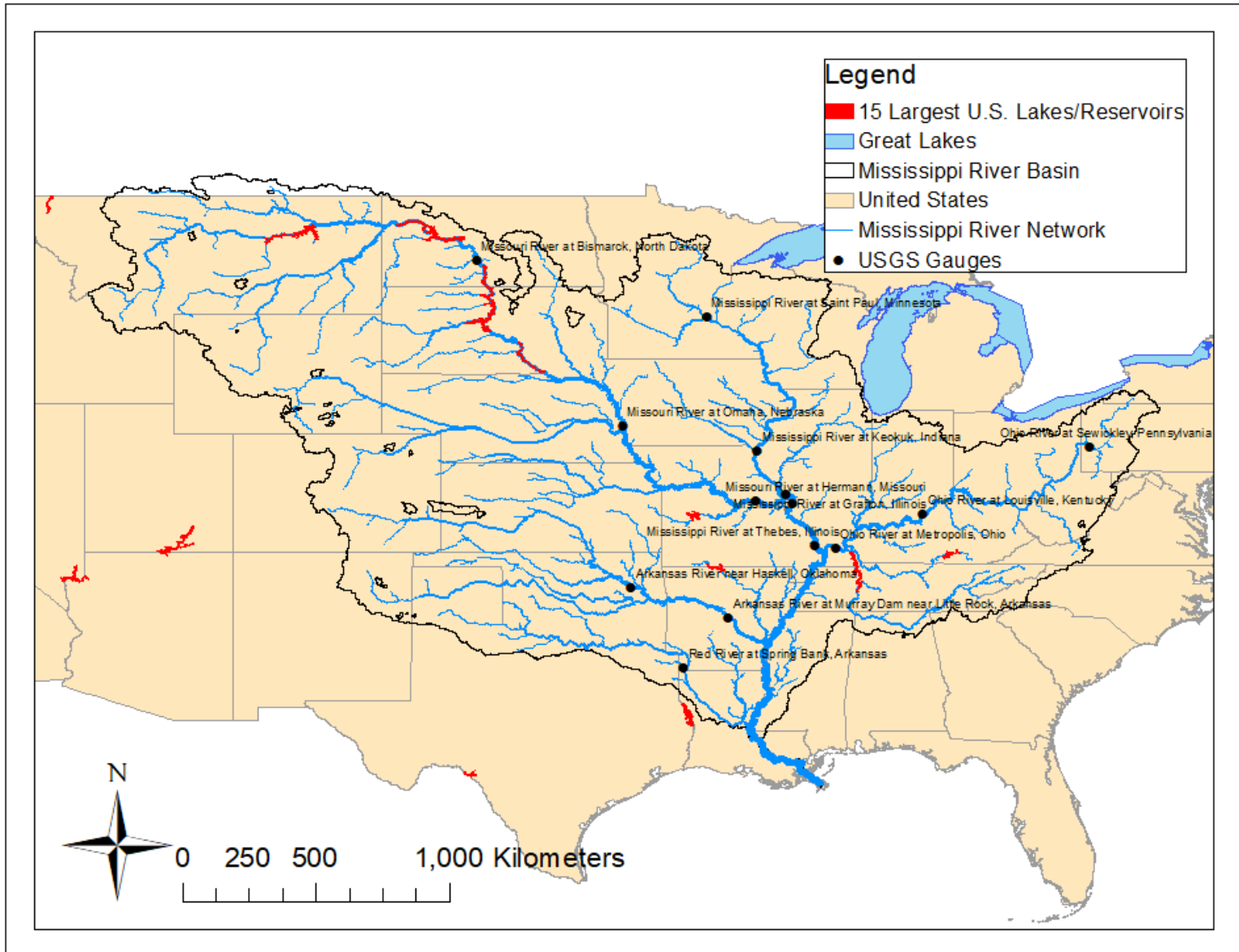


RivMIP update

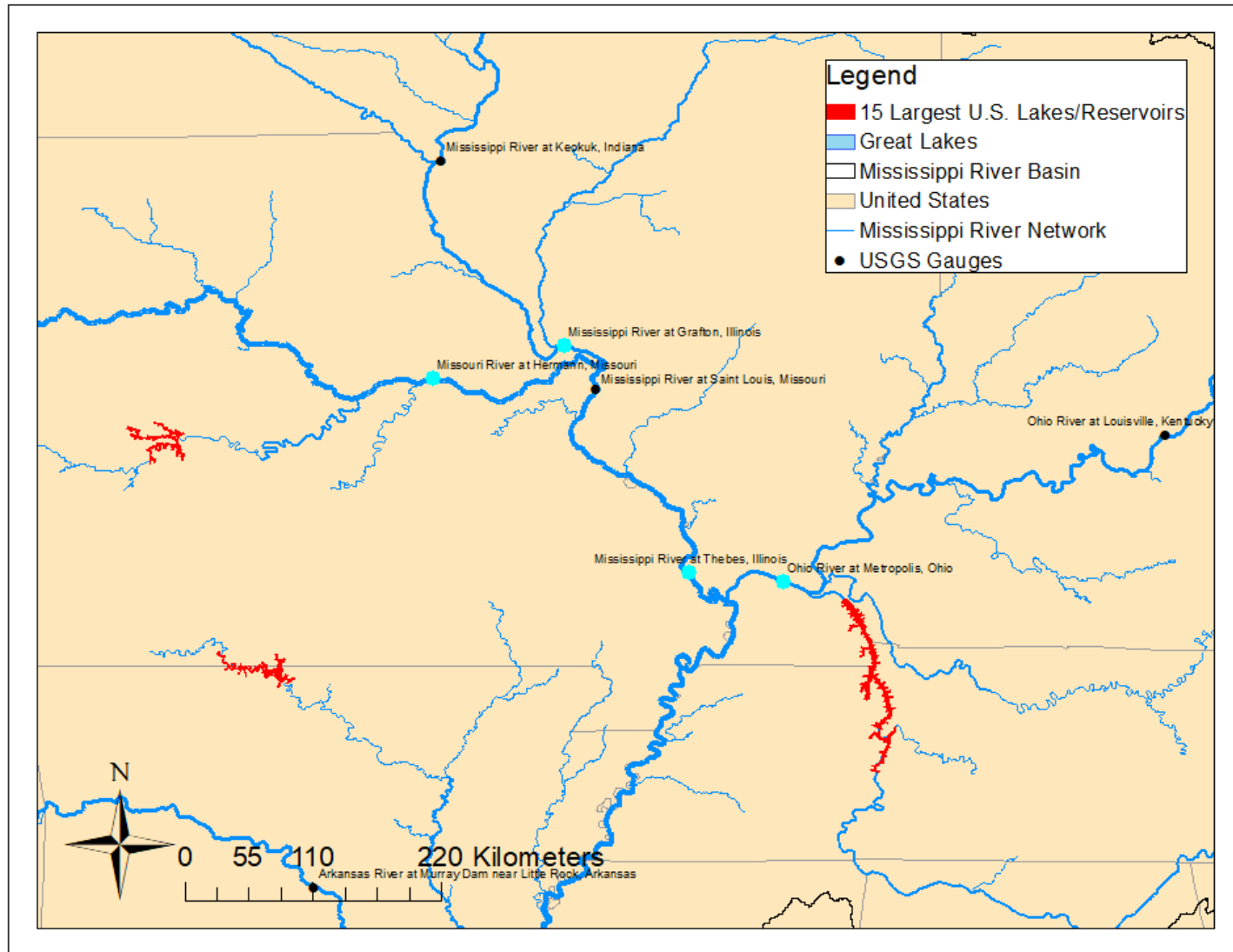
Cédric H. David¹, Dai Yamazaki², Sylvain
Biancamaria³, Aaron Boone⁴, R. Edward
Beighley⁵, Rodrigo Paiva⁶, Ayan Santos
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5. Northeastern University, Boston, MA, United States
6. Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil
7. Princeton University, Princeton, NJ, United States

Study domain

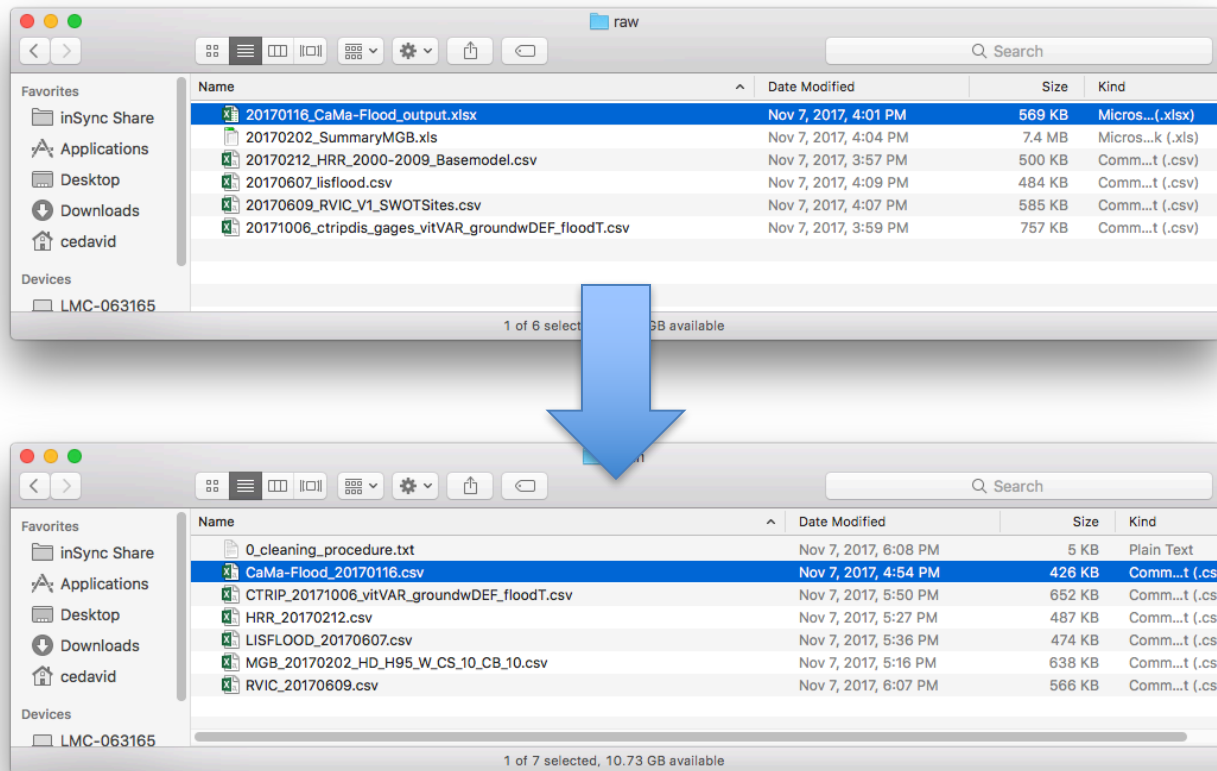


Zooming in on main confluences

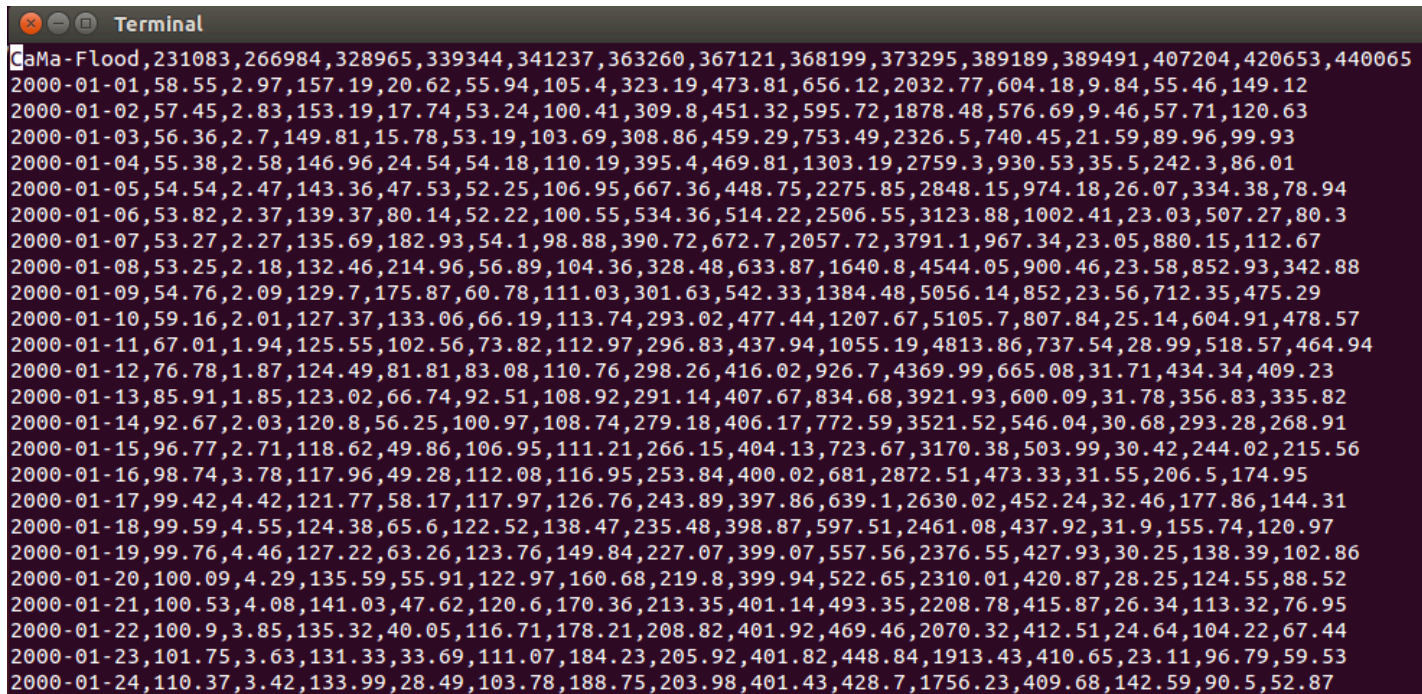


Model outputs used

- Over the past year we went from 3 to 7 models!
- The files used for the analysis herein are below:



File formats



Terminal

```
CaMa-Flood,231083,266984,328965,339344,341237,363260,367121,368199,373295,389189,389491,407204,420653,440065
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```

14 locations
throughout the
Mississippi River
Basin

As specified in experimental design table:

http://rapid-hub.org/docs/SWOT_ST_WG_Mississippi_Experimental_Design.pdf

With a slight change on River ID / vs USGS code and date format

Processing toolbox

Personal Open source Business Explore Pricing Blog Support This repository Search Sign in Sign up

c-h-david / rrr Watch 1 Star 1 Fork 4

Code Issues 0 Pull requests 0 Projects 0 Pulse Graphs

Reproducible Routing Rituals (RRR)

49 commits 1 branch 21 releases 3 contributors BSD-3-Clause

Branch: master New pull request Find file Clone or download

c-h-david New tests for David et al. (2015, WRR). Latest commit 3578746 a day ago

src	Removed extra blank spaces.	a day ago
tst	New tests for David et al. (2015, WRR).	a day ago
.gitignore	Added tracking for testing scripts.	13 days ago
.travis.yml	Updated year to 2017.	19 days ago
CONTRIBUTING	Updated contributors.	8 months ago
LICENSE	Updated year to 2017.	19 days ago
README.md	Modified for new HydroSHEDS scripts.	2 months ago
requirements.txt	Updated year to 2017.	19 days ago
version.sh	Updated year to 2017.	19 days ago

README.md

license BSD 3-Clause

build passing

The Reproducible Routing Rituals (RRR) is a Python and bash shell toolbox that combines many repetitive pre and post-processing tasks that are common to studying the movements of water on and underneath the land surface. Such tasks include the preparation of files corresponding to:

<https://github.com/c-h-david/rrr>

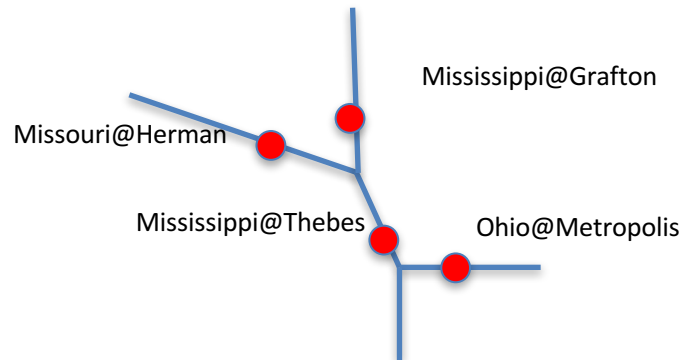
Has been updated by Kostas!

(Need to change hydrograph legend based on csv header, also add NSE and Correl in graph)

Analysis metrics (10 years)

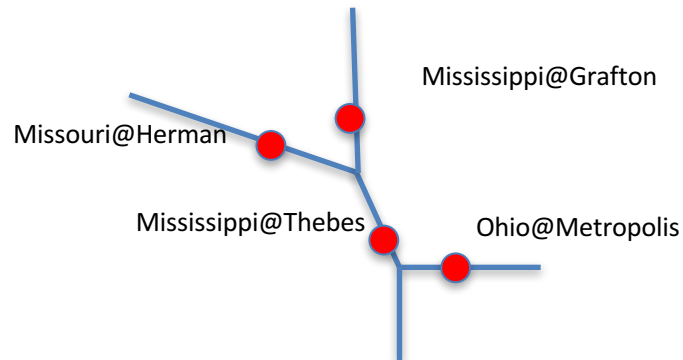
CaMa-Flood

rivid	Qobsbar	Qmodbar	RMSE	Bias	STDE	Nash	Correl
231083	466.87	2168.19	2847.6	1701.32	2283.49	-641.26	0.11
266984	401.49	627.94	527.94	226.46	476.9	-0.47	0.77
328965	755.54	3248.36	3653.29	2492.83	2670.64	-208.66	0.64
339344	989.58	265.44	1022.5	724.14	721.9	-0.48	0.53
341237	2188.6	2341.47	1183.07	152.87	1173.16	0.39	0.79
363260	3418.11	3203.96	1855.13	214.15	1842.73	0.35	0.67
367121	2083.22	5760.09	5317.36	3676.87	3841.22	-13.2	0.64
368199	5547.14	9002.83	5910.45	3455.69	4794.96	-1.86	0.69
373295	3623.28	1216.21	3775.26	2407.07	2908.36	-0.41	0.43
389189	8129.67	3297.73	7045.39	4831.94	5127.37	-0.38	0.55
389491	6080.37	9290.67	5964.7	3210.3	5027.09	-1.44	0.65
407204	303.33	737.56	796.49	434.23	667.71	-3.78	0.61
420653	1294.14	1877.28	1510.05	583.14	1392.91	-0.14	0.59
440065	588.61	793.52	679.05	204.91	647.39	0.12	0.59



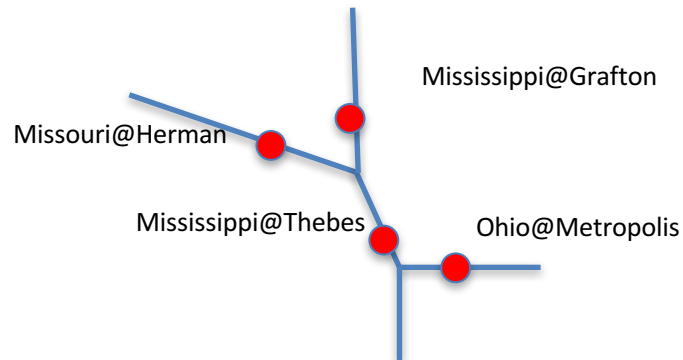
CTRIP

rivid	Qobsbar	Qmodbar	RMSE	Bias	STDE	Nash	Correl
231083	466.88	1119.7	1066.06	652.82	842.8	-88.99	0.17
266984	401.54	407.08	329.36	5.54	329.31	0.43	0.69
328965	755.59	2196.32	1924.85	1440.73	1276.45	-57.2	0.66
339344	989.47	1036.41	478.05	46.93	475.74	0.68	0.83
341237	2188.44	3360.82	1603.89	1172.38	1094.53	-0.12	0.87
363260	3417.3	4889.69	1911.09	1472.39	1218.33	0.31	0.9
367121	2083.12	5229.46	3889.5	3146.35	2286.64	-6.6	0.79
368199	5546.12	10352.23	5677.78	4806.1	3022.99	-1.64	0.88
373295	3622.73	4334.57	2250.3	711.84	2134.75	0.5	0.74
389189	8127.93	10401.05	4157.48	2273.12	3481.03	0.52	0.82
389491	6078.46	10798.08	5607.94	4719.61	3028.91	-1.16	0.87
407204	303.38	1138.57	993.02	835.19	537.17	-6.42	0.79
420653	1294.14	3315.79	2379.92	2021.66	1255.76	-1.83	0.81
440065	588.4	1221.37	755.12	632.97	411.77	-0.09	0.89



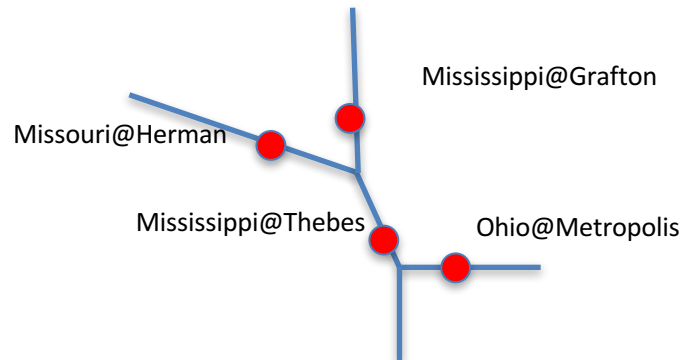
HRR

rivid	Qobsbar	Qmodbar	RMSE	Bias	STDE	Nash	Correl
231083	466.87	1522.26	1727.36	1055.39	1367.45	-235.33	0.05
266984	401.49	730.43	915.27	328.94	854.12	-3.41	0.39
328965	755.54	2447.66	2610.7	1692.12	1988.09	-106.07	0.54
339344	989.58	967.78	706.58	21.81	706.24	0.29	0.55
341237	2188.6	3598.96	3013.84	1410.35	2663.48	-2.97	0.59
Mississippi@Grafton Missouri@Herman	363260	4964.92	3502.5	1546.81	3142.44	-1.33	0.65
	367121	5347.59	4941.56	3264.36	3709.85	-11.27	0.68
	368199	10388.26	7624.95	4841.13	5890.95	-3.76	0.72
	373295	3623.28	2147.3	228.93	2135.07	0.54	0.74
Ohio@Metropolis Mississippi@Thebes	389189	8837.52	3493.17	707.85	3420.7	0.66	0.84
	389491	10917.47	7779.7	4837.09	6093.13	-3.15	0.7
	407204	804.44	886.07	501.11	730.75	-4.91	0.6
	420653	2417.36	2050.36	1123.21	1715.33	-1.1	0.66
	440065	1065.38	1027.06	476.77	909.7	-1.01	0.64



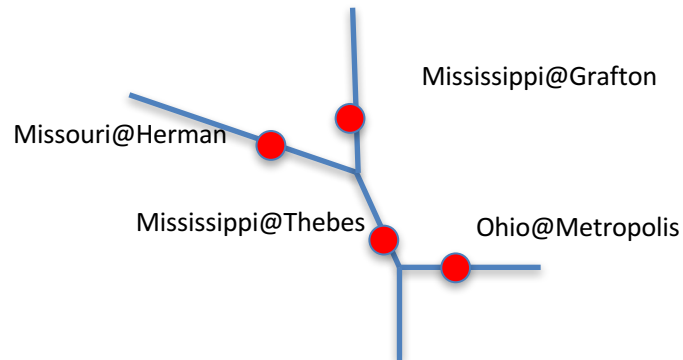
LISFLOOD

rivid	Qobsbar	Qmodbar	RMSE	Bias	STDE	Nash	Correl
231083	466.87	324.54	407.97	142.33	382.34	-12.18	-0.17
266984	401.49	2164.86	2309.3	1763.37	1491.11	-27.05	0.23
328965	755.54	1903.68	1491.06	1148.15	951.33	-33.93	0.39
339344	989.58	395.23	990.06	594.35	791.82	-0.39	0.34
341237	2188.6	1160.99	1995.82	1027.62	1710.94	-0.74	0.16
363260	3418.11	3226.87	2469.11	191.24	2461.69	-0.16	0.24
367121	2083.22	2605.44	1705.11	522.22	1623.18	-0.46	0.31
368199	5547.14	3927.29	3495.26	1619.85	3097.24	0	0.47
373295	3623.28	616.72	4257.98	3006.56	3015.13	-0.79	0.45
389189	8129.67	2203.25	8169.07	5926.42	5622.38	-0.86	0.44
389491	6080.37	5160.99	3479.59	919.38	3355.94	0.17	0.49
407204	303.33	6925.79	7233.12	6622.46	2908.79	-392.99	0.34
420653	1294.14	450.23	1628.41	843.92	1392.66	-0.33	0.19
440065	588.61	7418.13	7529.74	6829.51	3170.92	-107.2	0.22



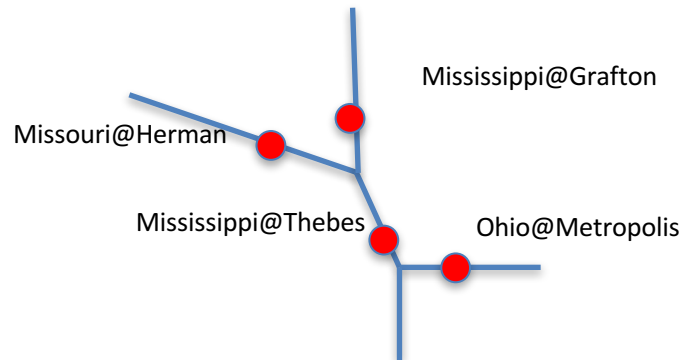
MGB

rivid	Qobsbar	Qmodbar	RMSE	Bias	STDE	Nash	Correl
231083	466.87	1489.8	1412.67	1022.93	974.31	-157.07	0.04
266984	401.49	731.83	583.33	330.34	480.77	-0.79	0.57
328965	755.54	2432.86	2231.81	1677.33	1472.25	-77.25	0.62
339344	989.58	1004.9	829.66	15.31	829.52	0.03	0.3
341237	2188.6	3566.04	2475.78	1377.43	2057.23	-1.68	0.51
363260	3418.11	4943.93	2810.09	1525.82	2359.76	-0.5	0.63
367121	2083.22	5383.1	4462.05	3299.88	3003.45	-9	0.69
368199	5547.14	10393.25	6664.09	4846.12	4574.42	-2.63	0.71
373295	3623.28	3885.36	2924.36	262.08	2912.59	0.16	0.45
389189	8129.67	8912.99	4893.85	783.32	4830.75	0.33	0.63
389491	6080.37	10924.6	6734.23	4844.23	4677.96	-2.11	0.7
407204	303.33	804.96	701.95	501.63	491.02	-2.71	0.74
420653	1294.14	2415.55	1619.81	1121.41	1168.85	-0.31	0.73
440065	588.61	1044.98	666.13	456.37	485.24	0.15	0.84



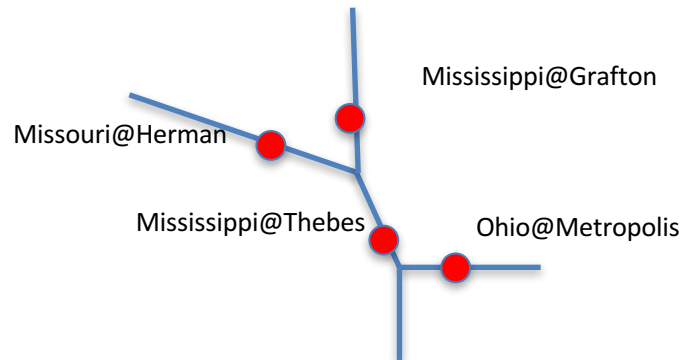
RAPID

rivid	Qobsbar	Qmodbar	RMSE	Bias	STDE	Nash	Correl
231083	466.88	908.49	885.84	441.61	767.91	-61.14	0.13
266984	401.54	477.12	520.34	75.59	514.82	-0.42	0.56
328965	755.59	1921.84	2000.64	1166.25	1625.55	-61.87	0.63
339344	989.47	1003.27	457.14	13.8	456.93	0.7	0.84
341237	2188.44	2977.87	1539.36	789.43	1321.52	-0.04	0.83
363260	3417.3	4445.62	1962.56	1028.31	1671.59	0.27	0.85
367121	2083.12	4976.8	4276.9	2893.68	3149.37	-8.19	0.8
368199	5546.12	9520.45	5617.89	3974.33	3970.56	-1.58	0.88
373295	3622.73	4369.31	2170.34	746.58	2037.89	0.54	0.77
389189	8127.93	10413	3577.19	2285.07	2752.23	0.64	0.9
389491	6078.46	10257.41	5787.95	4178.95	4004.6	-1.3	0.87
407204	303.38	1020.28	1030.72	716.9	740.56	-7	0.74
420653	1294.14	2990	2442.89	1695.87	1758.34	-1.98	0.75
440065	588.4	1420.04	1310.45	831.64	1012.74	-2.28	0.73



RVIC

rivid	Qobsbar	Qmodbar	RMSE	Bias	STDE	Nash	Correl
231083	466.87	995.38	972.34	528.5	816.17	-73.89	0.17
266984	401.49	282.49	355.71	118.99	335.21	0.33	0.65
328965	755.54	695.49	760.53	60.05	758.16	-8.09	0.54
339344	989.58	1180.07	632.99	190.49	603.65	0.43	0.72
341237	2188.6	2990.95	1365.31	802.35	1104.68	0.19	0.87
363260	3418.11	3639.09	1534.8	220.98	1518.8	0.55	0.81
367121	2083.22	15.92	2497.3	2067.3	1400.98	-2.13	0.5
368199	5547.14	8839.27	4985.04	3292.13	3743.32	-1.03	0.79
373295	3623.28	4317.26	2641.63	693.98	2548.85	0.31	0.62
389189	8129.67	7239.07	4111	890.6	4013.38	0.53	0.75
389491	6080.37	10255.47	7224.98	4175.1	5896.51	-2.58	0.31
407204	303.33	287.95	354.75	15.38	354.41	0.05	0.6
420653	1294.14	39.05	1868.82	1255.09	1384.65	-0.75	0.5
440065	588.61	592.38	473.77	3.77	473.75	0.57	0.77



Hydrographs (2 years)

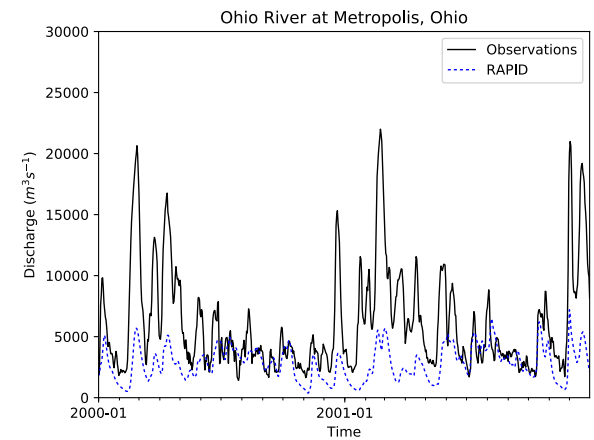
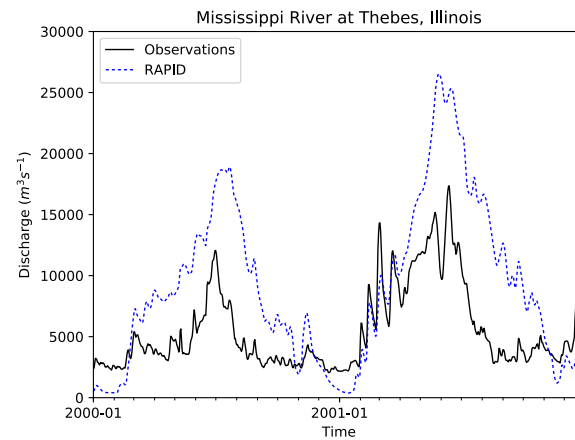
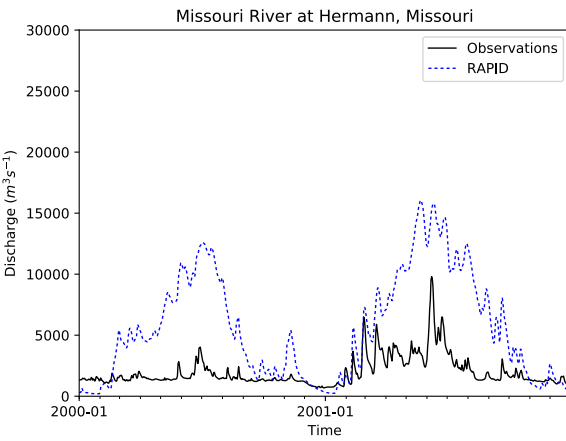
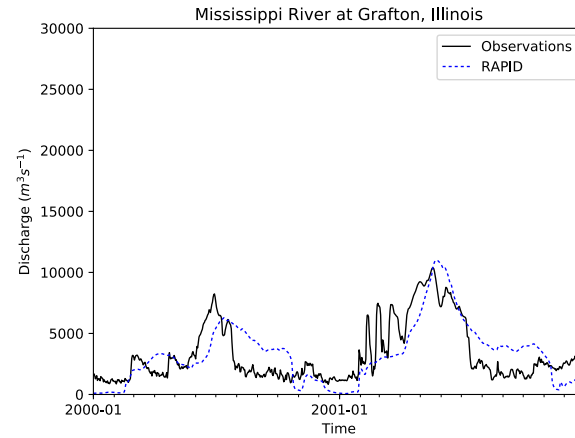
CaMa-Flood

Missouri@Herman

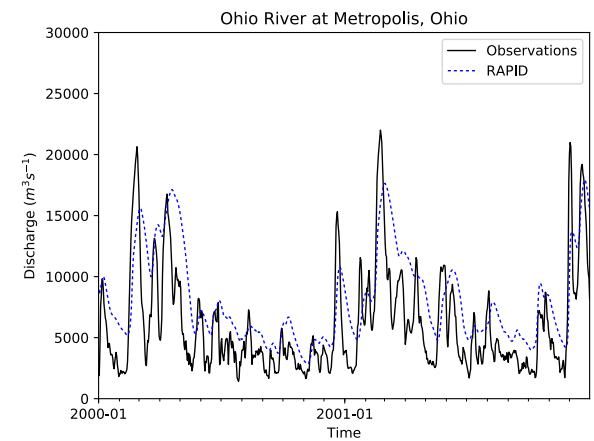
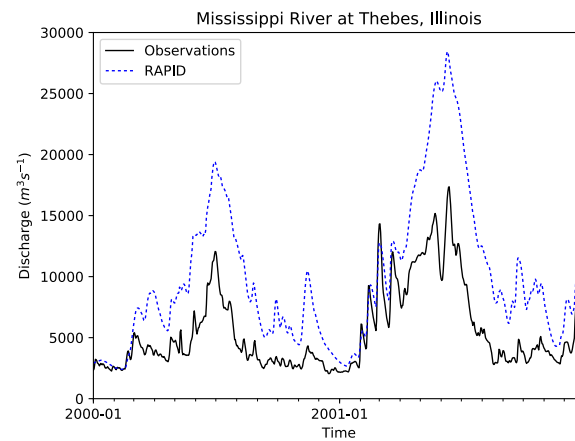
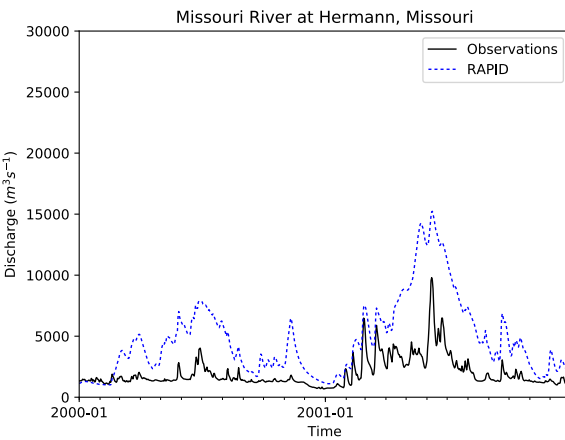
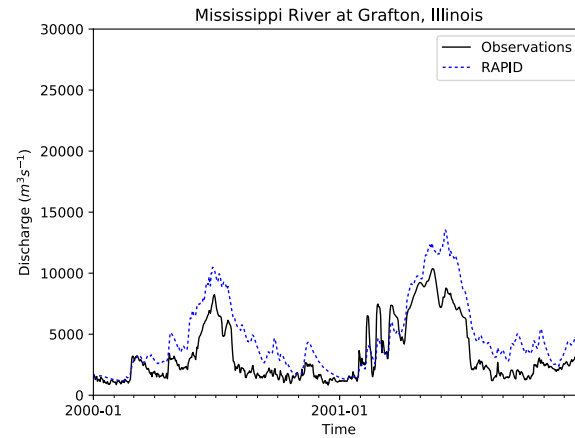
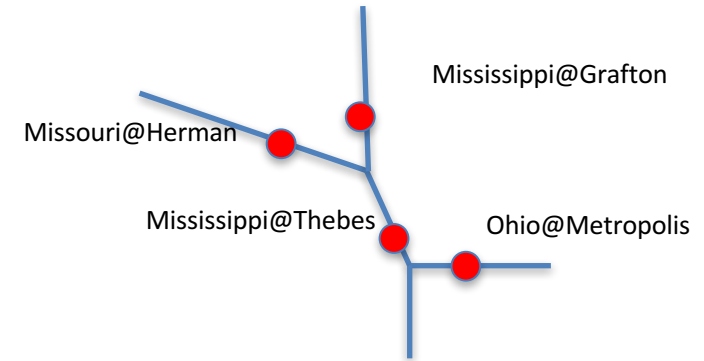
Mississippi@Grafton

Mississippi@Thebes

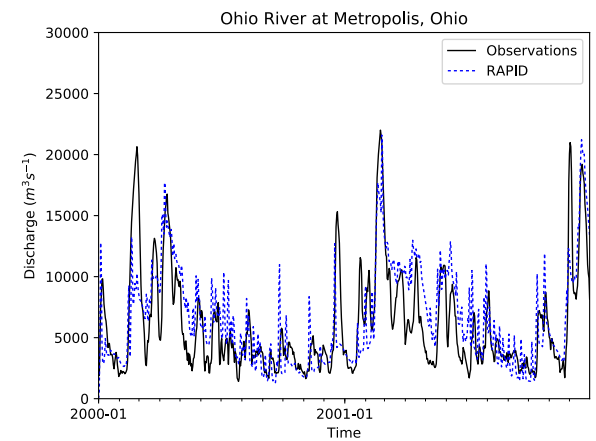
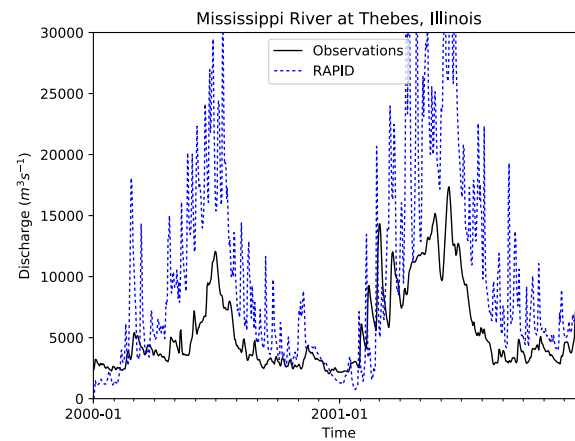
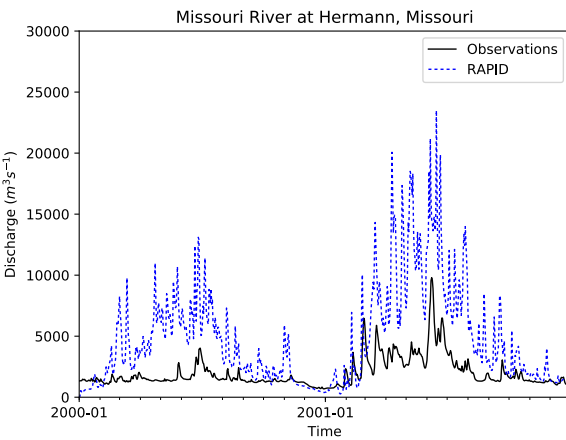
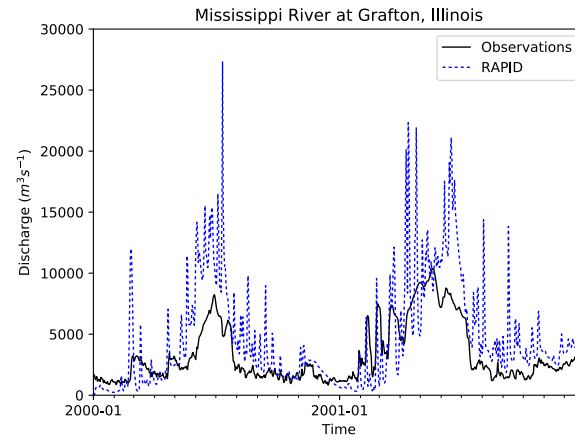
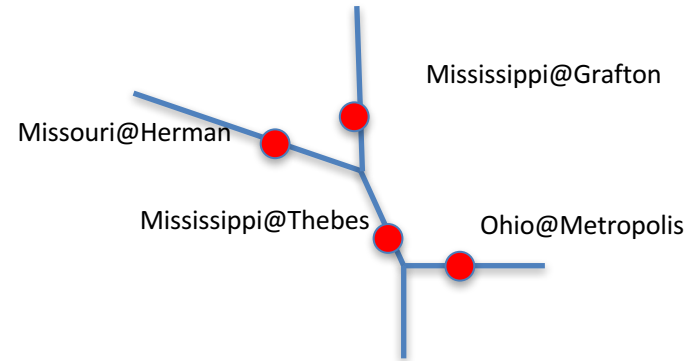
Ohio@Metropolis



CTRIP



HRR



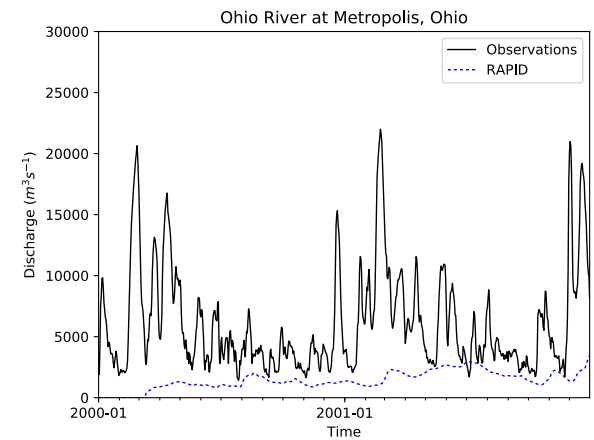
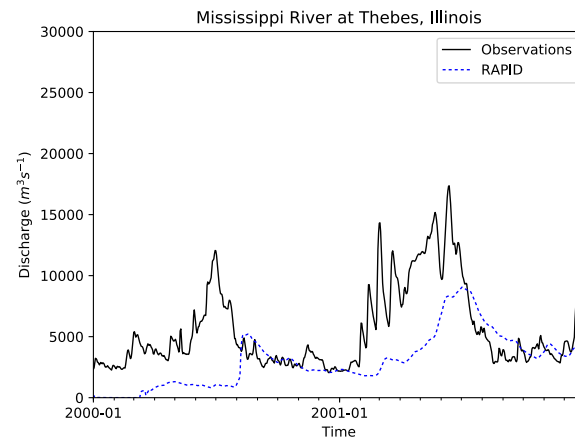
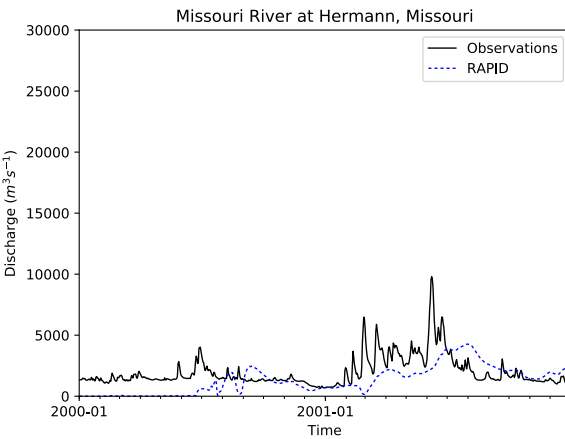
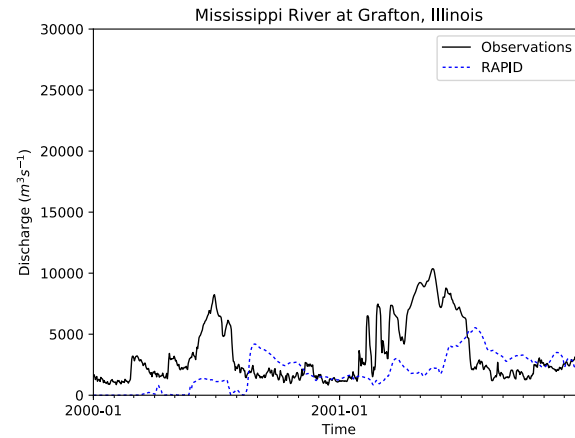
LISFLOOD

Missouri@Herman

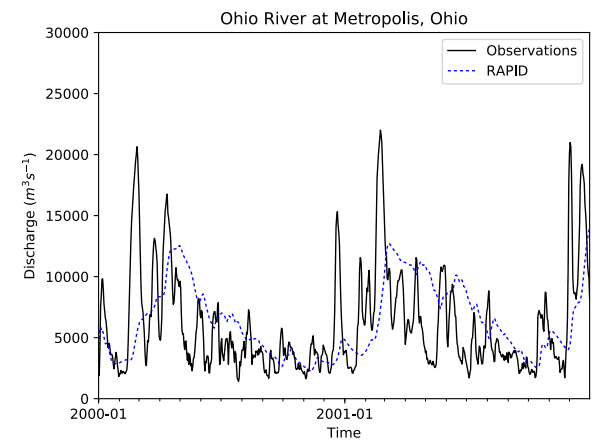
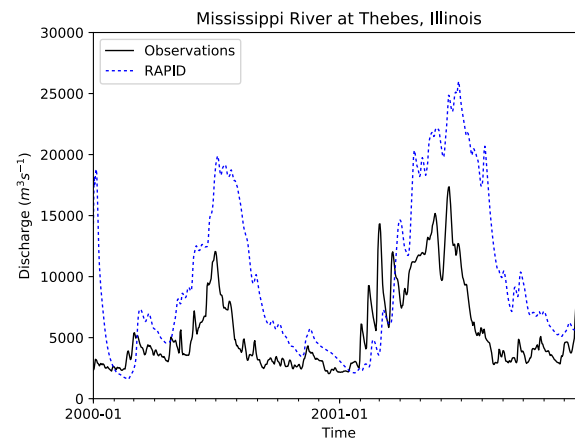
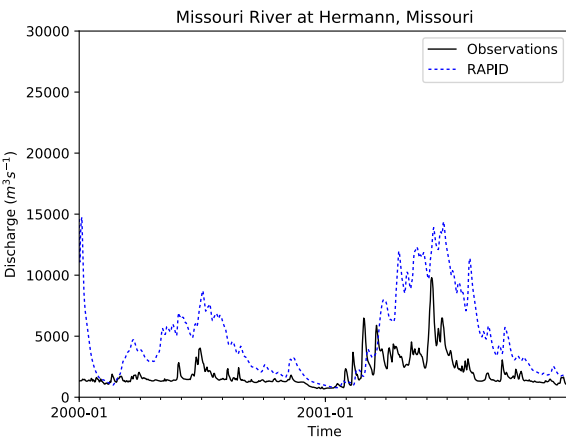
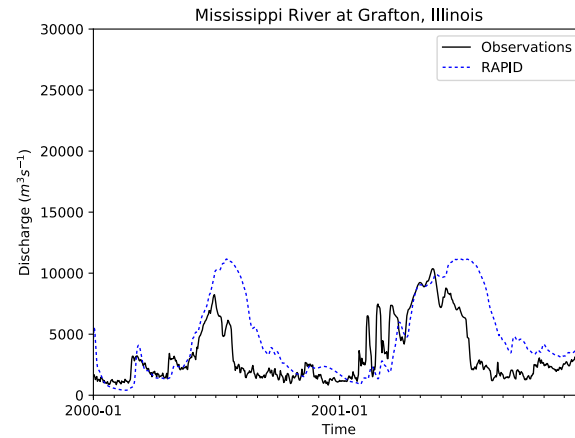
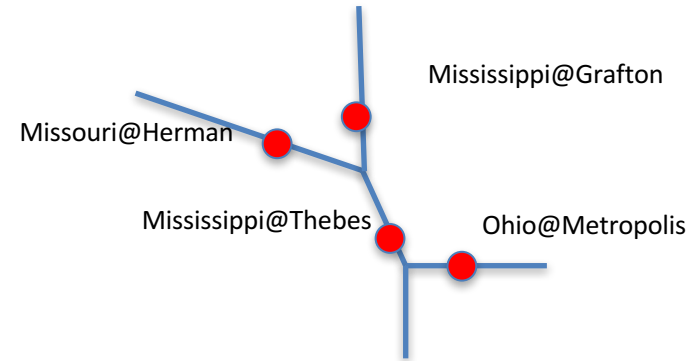
Mississippi@Grafton

Mississippi@Thebes

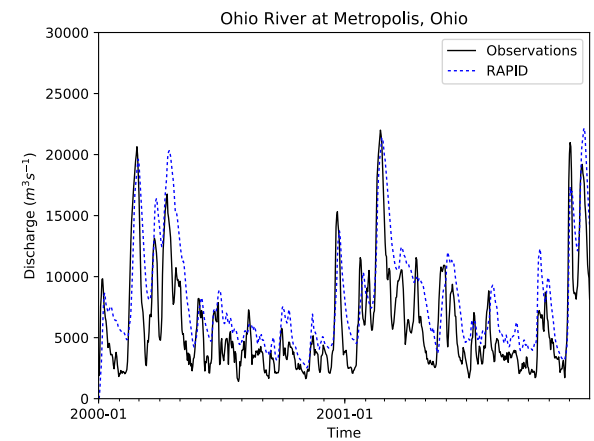
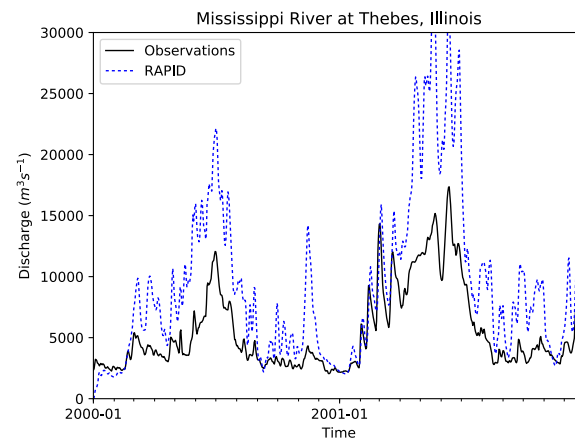
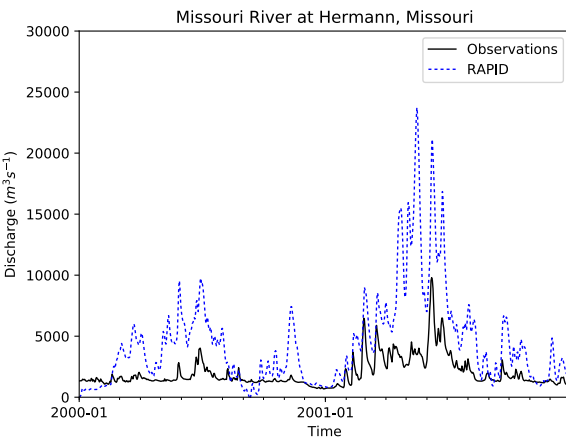
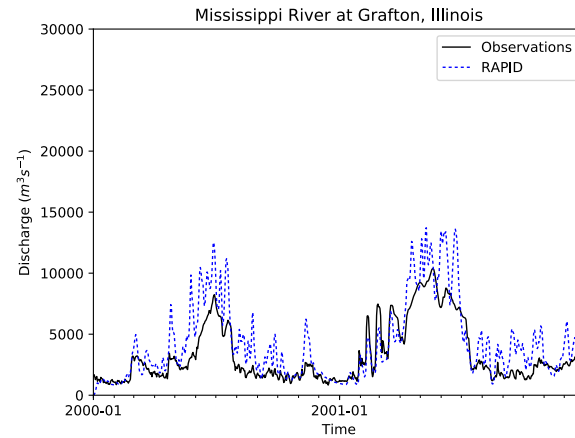
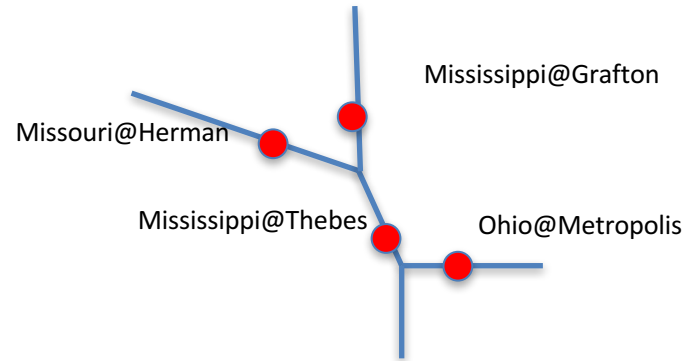
Ohio@Metropolis



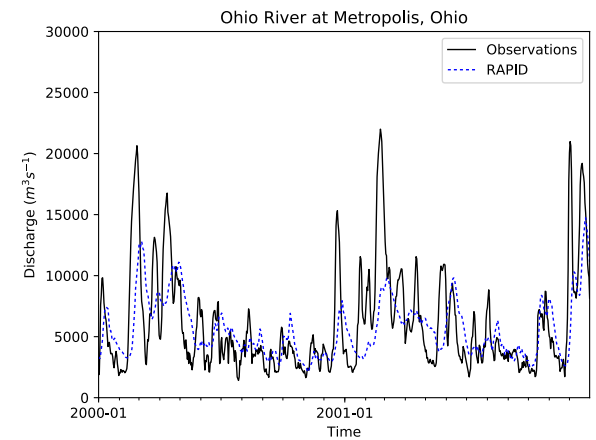
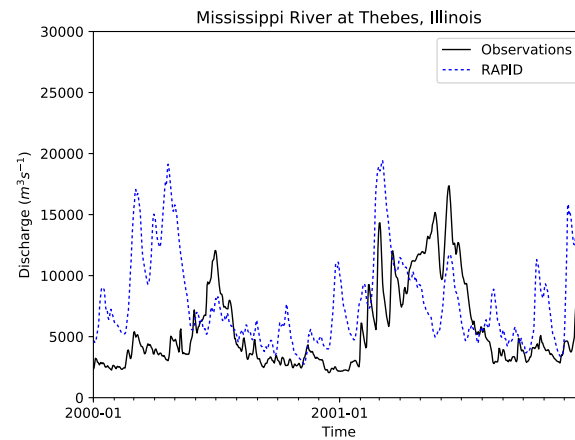
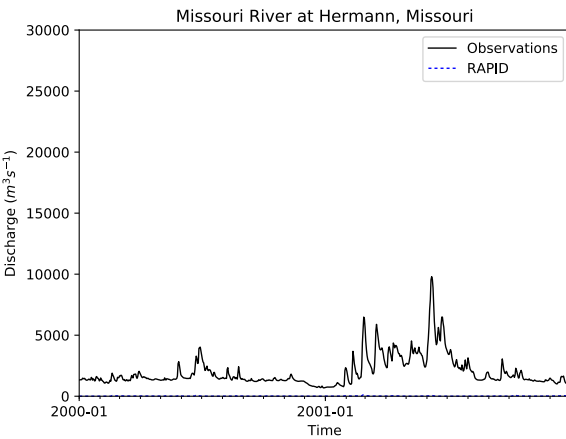
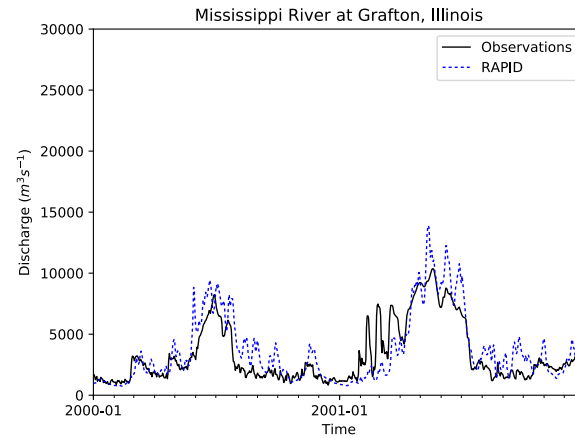
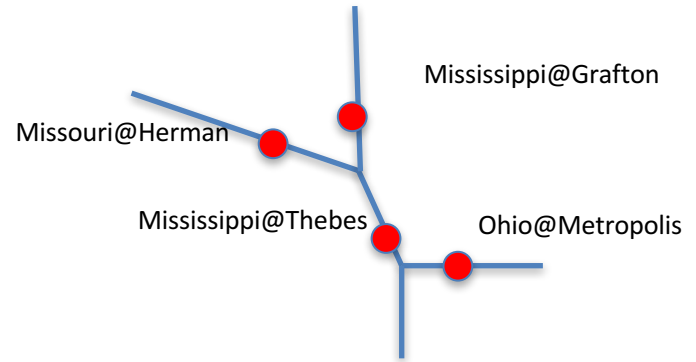
MGB



RAPID



RVIC



Thanks!
Questions?