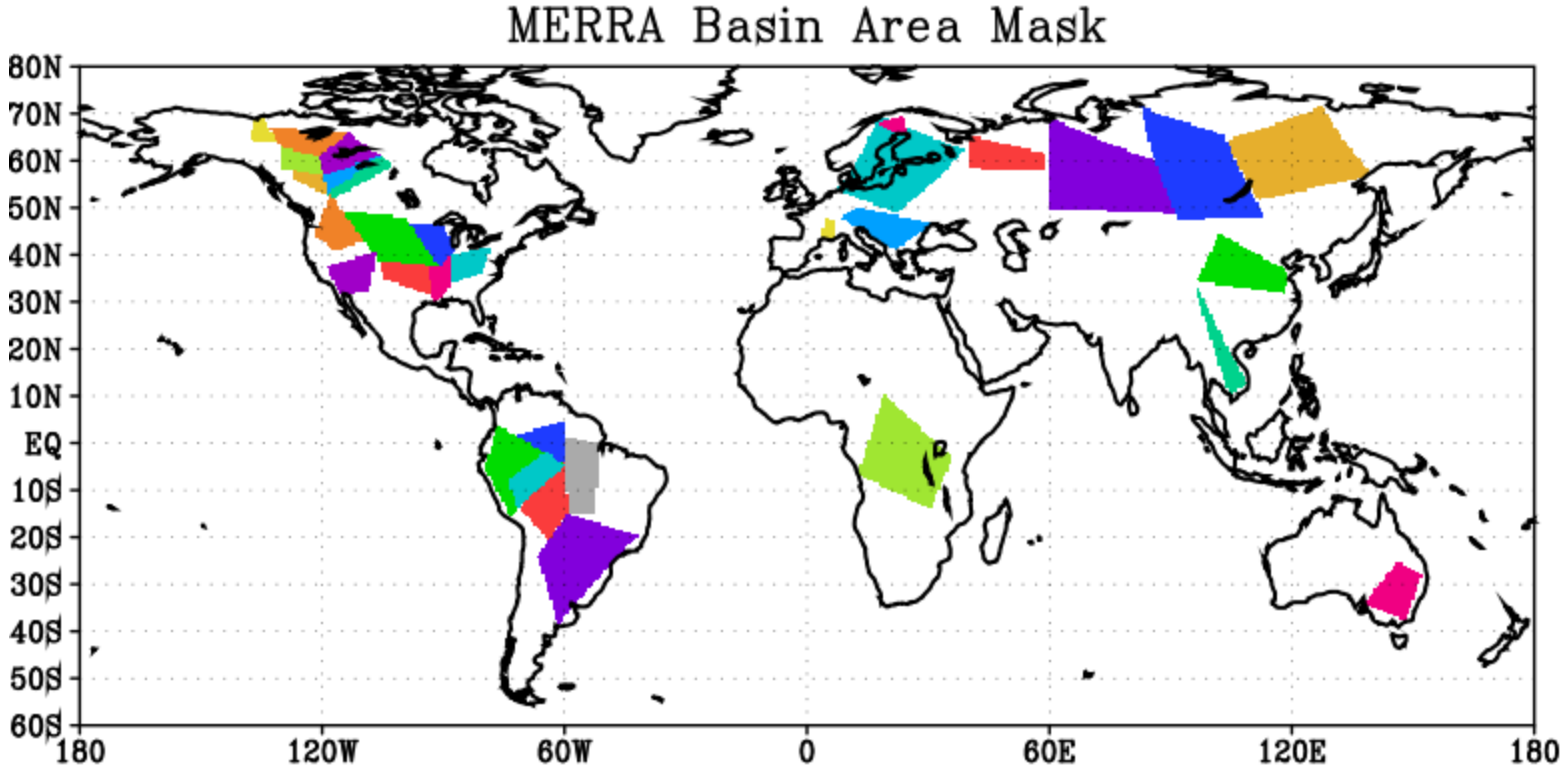
Basin-average data: Cloud Albedo and the Diurnal Cycle

Following ERA40, Basin Averages



- One hourly data, area averaged for 160 of the 2d variables
- Well used by ECMWF and A. K. Betts to evaluate land-atmosphere processes in ERA40

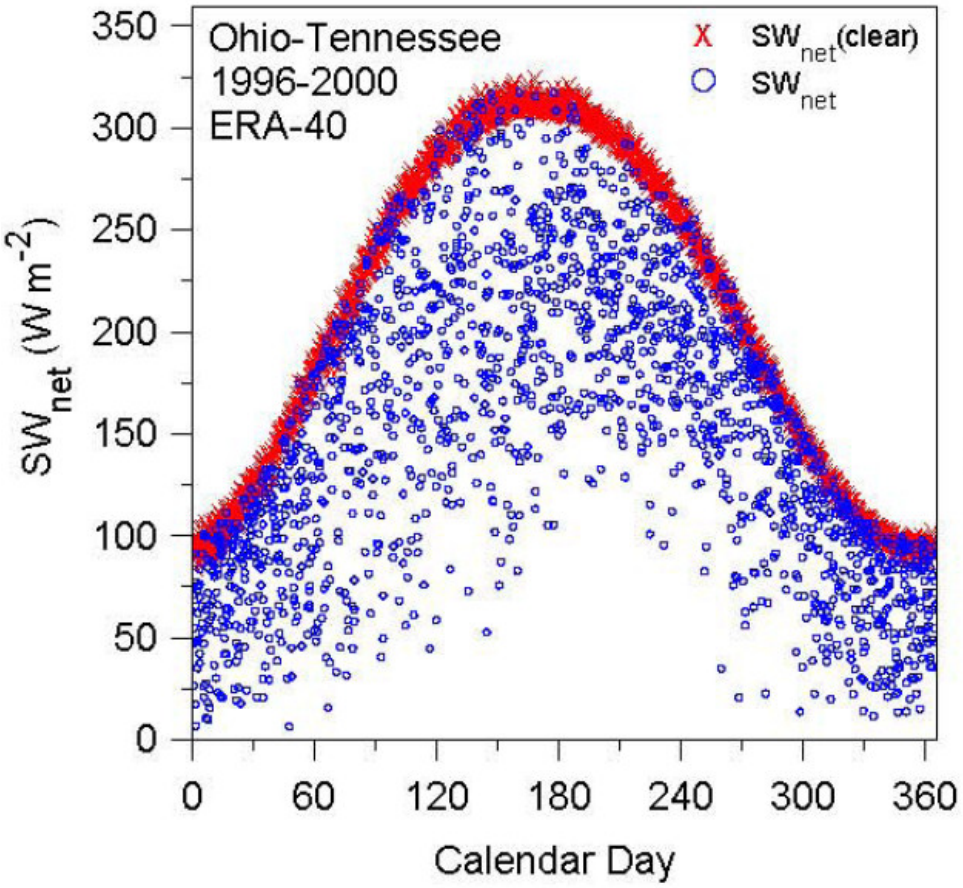
GrADS20\merra/Regional Basins/Basin_Map.gs – accesses GDS data

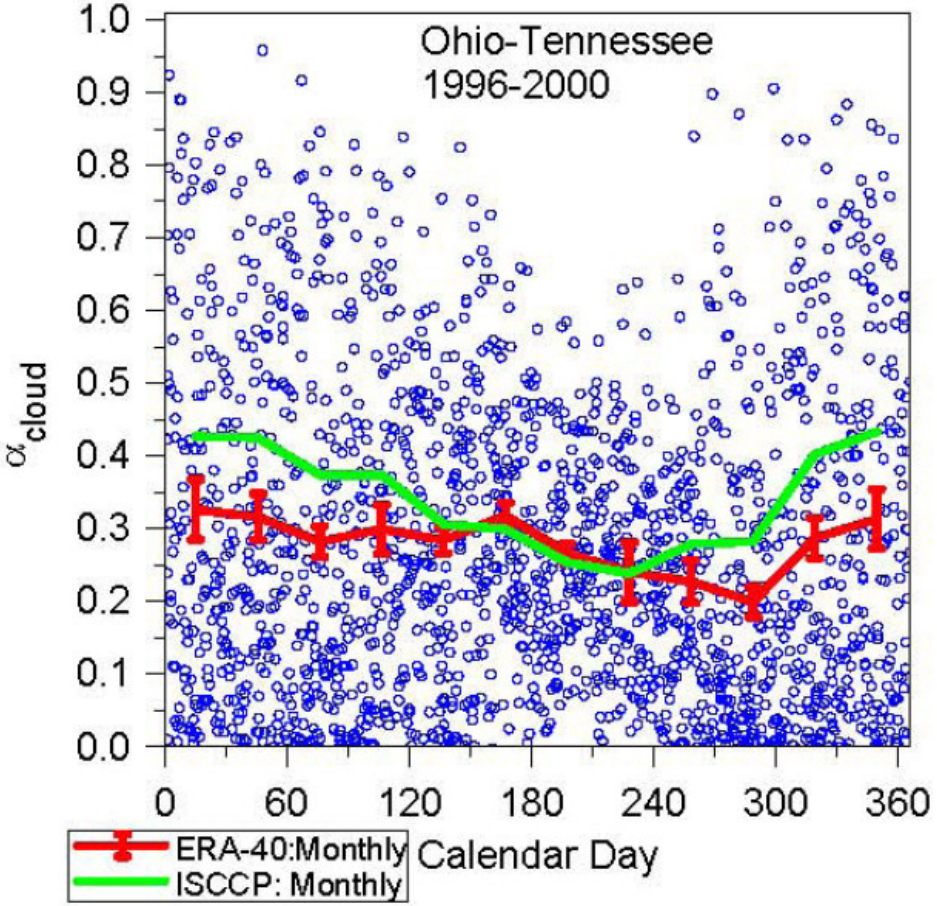
Basin Data List

28. Mississippi Red-Arkansas
29. Mississippi Missouri
30. Mississippi Upper Mississippi
31. **Mississippi Ohio**
32. Mississippi Lower Mississippi-Tennessee
33. MacKenzie Peel River Basin + Mackenzie Delta
34. MacKenzie Great Bear Lake
35. MacKenzie Great Slave Lake
36. MacKenzie Liard River Basin
37. MacKenzie Peace River Basin east
38. MacKenzie Peace River Basin west
39. MacKenzie Athabasca
40. Cuenca de la Plata
41. Amazon River Xingu
42. **Amazon River Madiera**
43. Amazon River Solimoes
44. Amazon River Negro
45. Amazon River Purus
46. Torne River Basin
47. Rhone River Basin
48. Columbia River Basin
49. **Colorado River Basin**
50. Congo River Basin
51. Danube River Basin
52. Lena River Basin
53. Mekong River Basin
54. Ob River Basin
55. Severnaya River Basin
56. Yellow River Basin
57. Yenisei River Basin
58. BALTEX
59. Murray Darling River Basin
60. Mississippi River Basin (28-32)
61. MacKenzie River Basin (33-39)
62. Amazon River Basin (41-45)

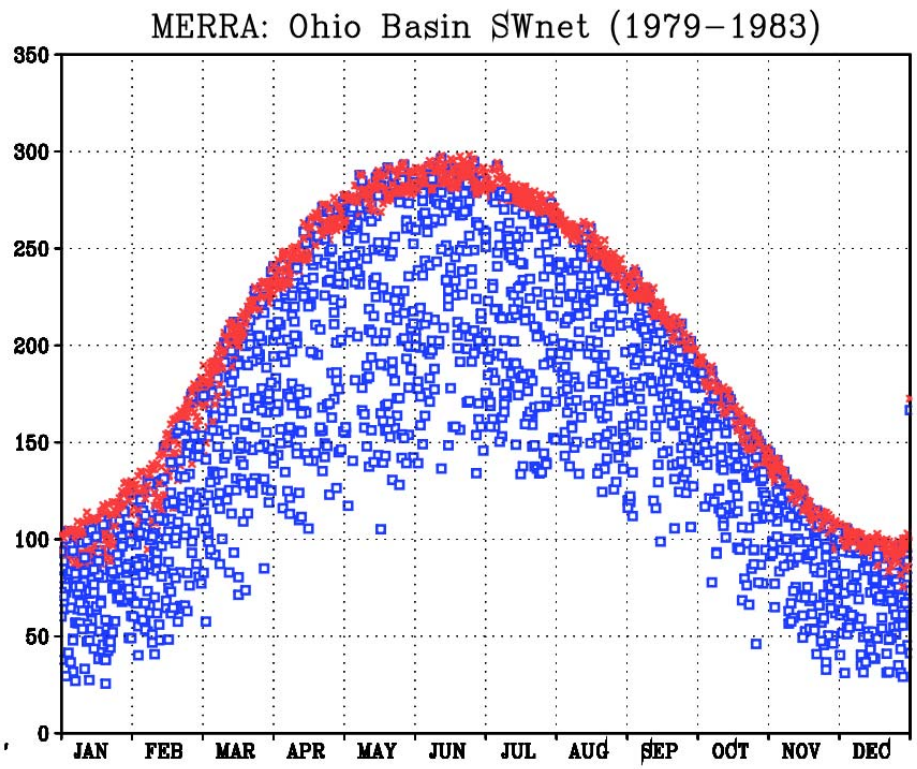
28-58 follow ECMWF
http://www.ecmwf.int/research/era/Products/Archive_Plan/Archive_plan_6.html

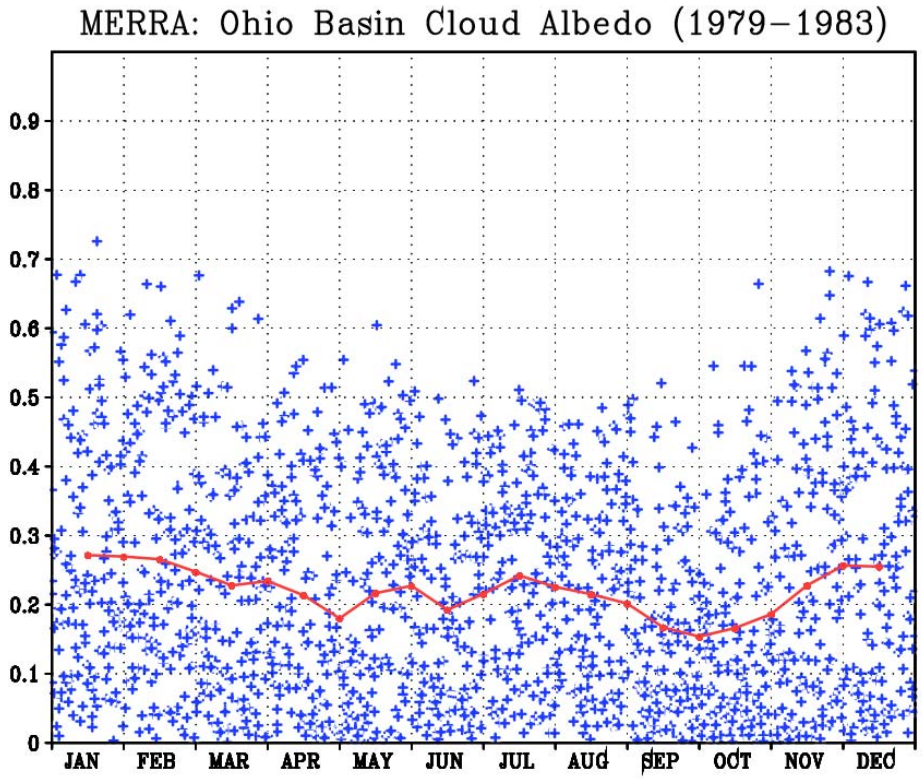
Cloud albedo





MERRA Ohio Cloud Albedo

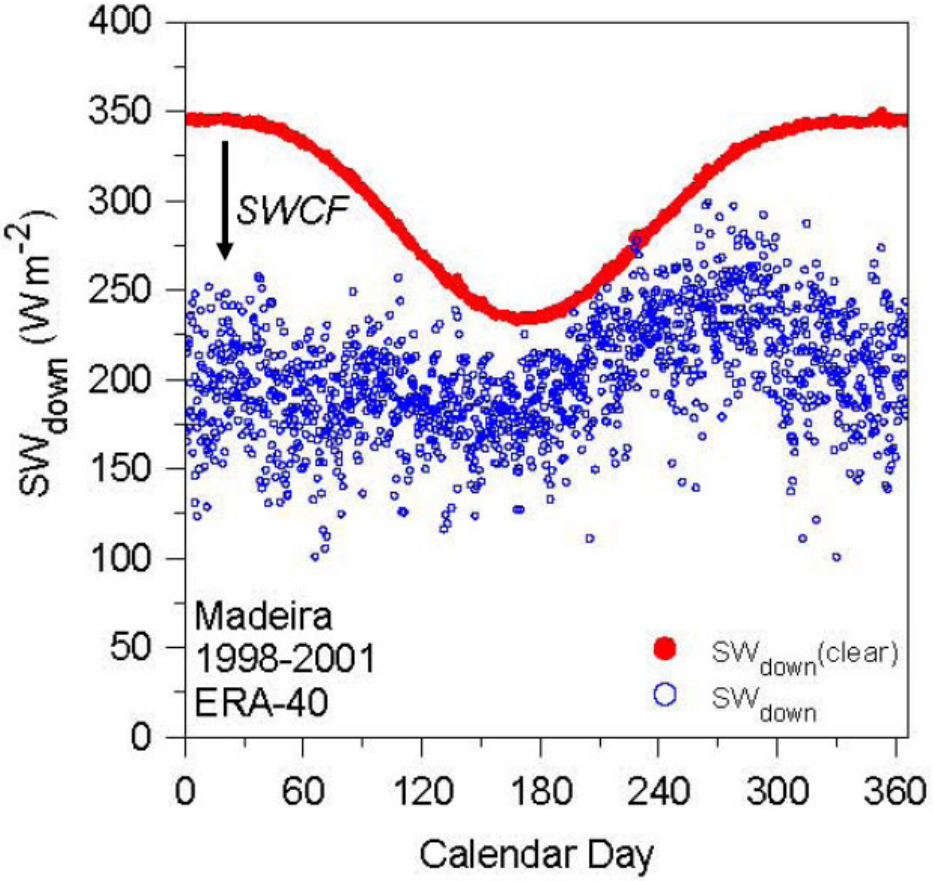


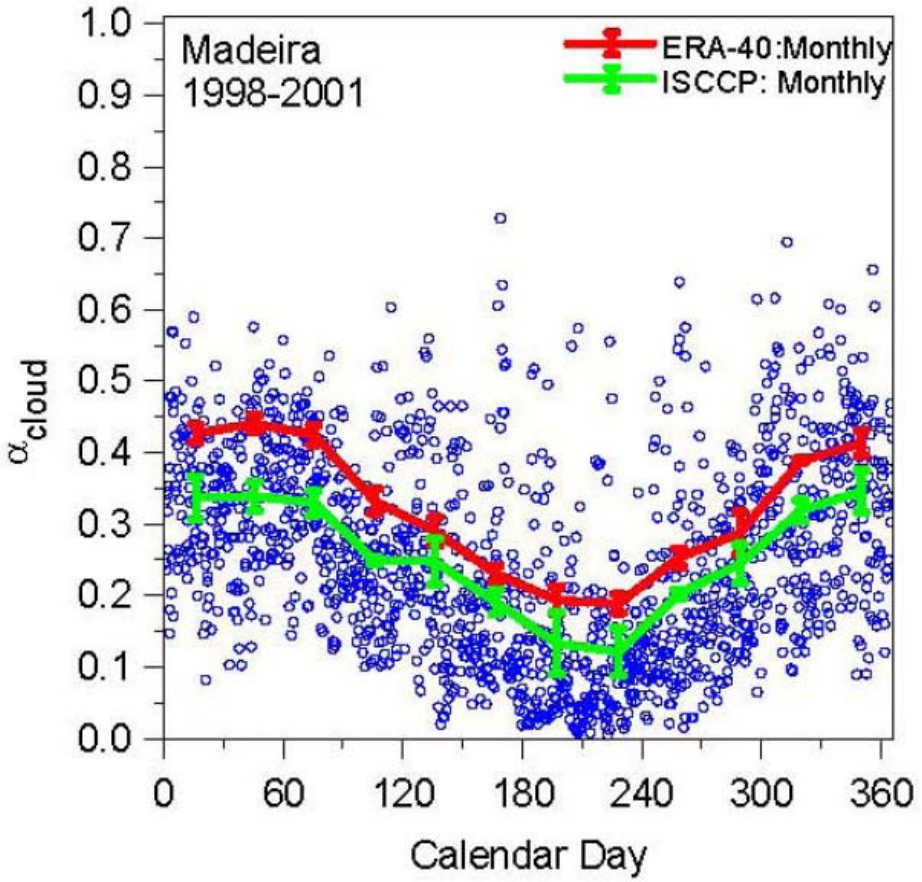


GrADS20\merra\Regional Basins\ACld\Ohio_SWclr.gs (Grads Script, grads –l)

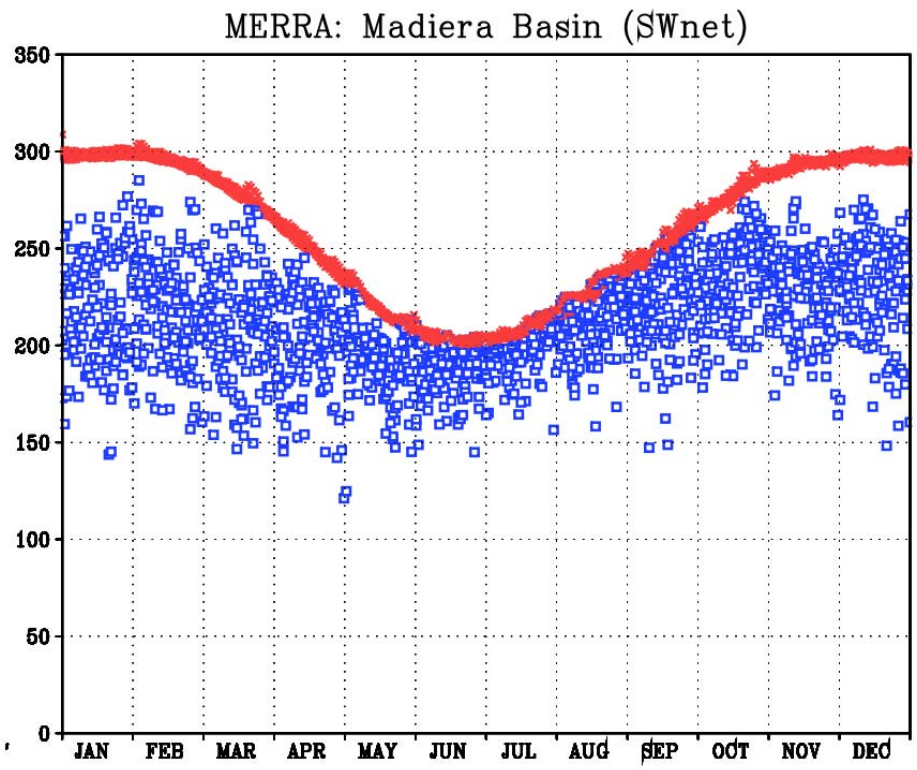
GrADS20\merra\Regional Basins\ACld\Ohio_CloudAlbedo.gs (Grads Script, grads –l)

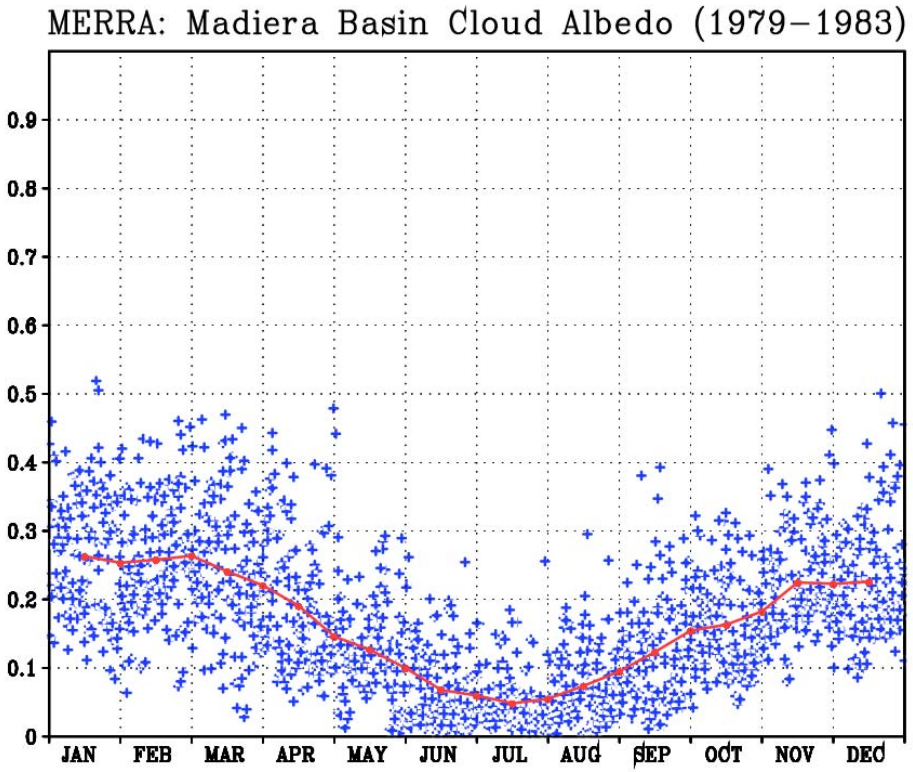
Cloud albedo: ERA-40 data





MERRA Madiera Cloud Albedo

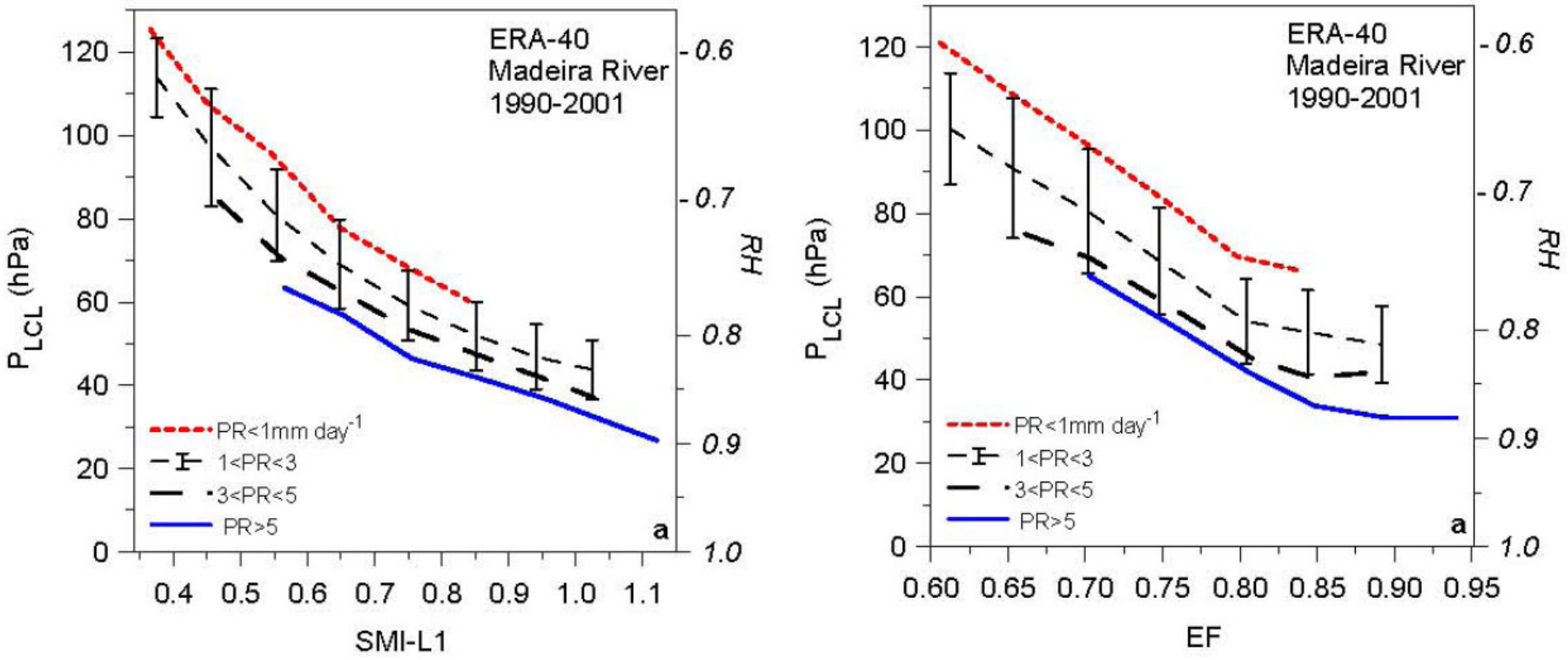




GrADS20\merra\Regional Basins\ACld\Madiera_SWclr.gs (Grads Script, grads –l)

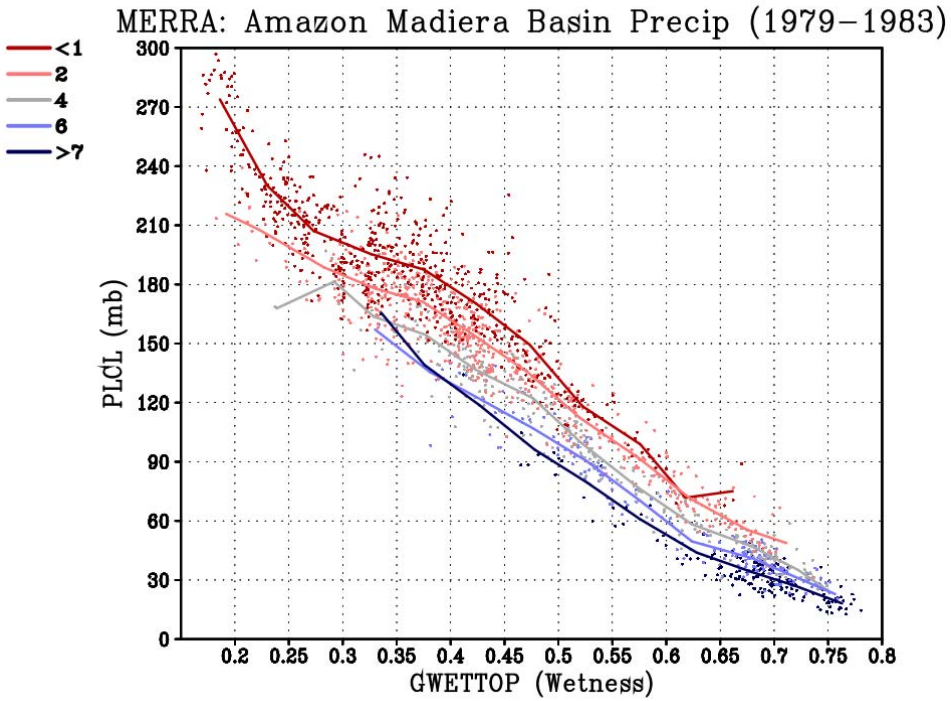
GrADS20\merra\Regional Basins\ACld\Madiera_CloudAlbedo.gs (Grads Script, grads –l)

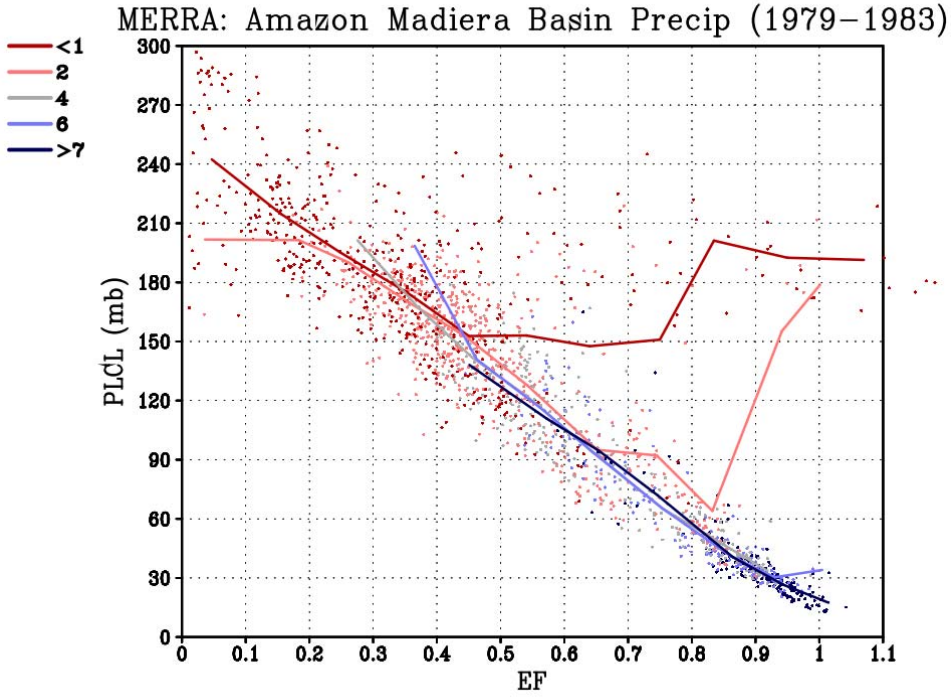
Land-surface-BL Coupling



- SMI-L1 = (SM- 0.171)/(0.323-0.171)

MERRA Madiera LCL, Wetness and Evaporative Fraction

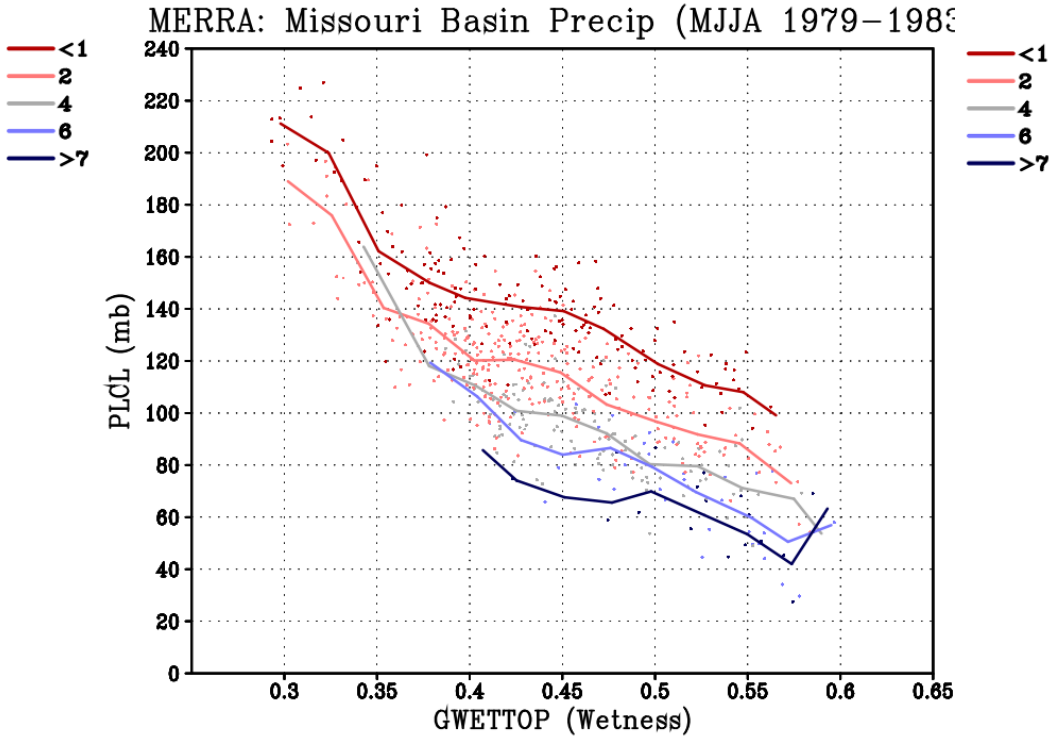


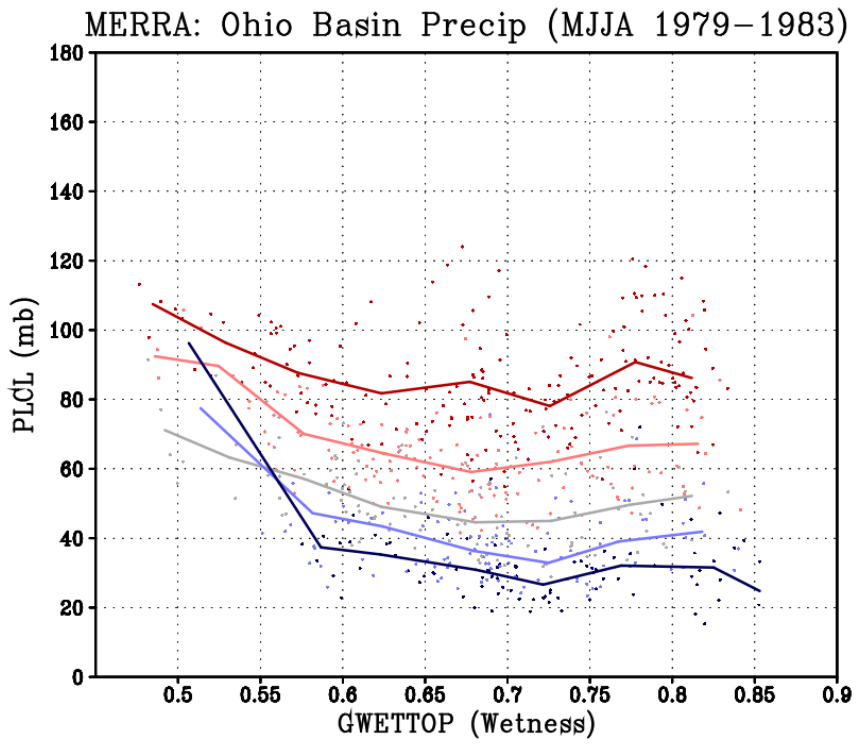


GrADS20\merra\Regional Basins\Daily\daily_Madiera_LCL.gs (Grads Script, grads –l)

GrADS20\merra\Regional Basins\Daily\daily_Madiera_LCL-EF.gs (Grads Script, grads –l)

MERRA: Missouri and Ohio LCL, Wetness and Precip

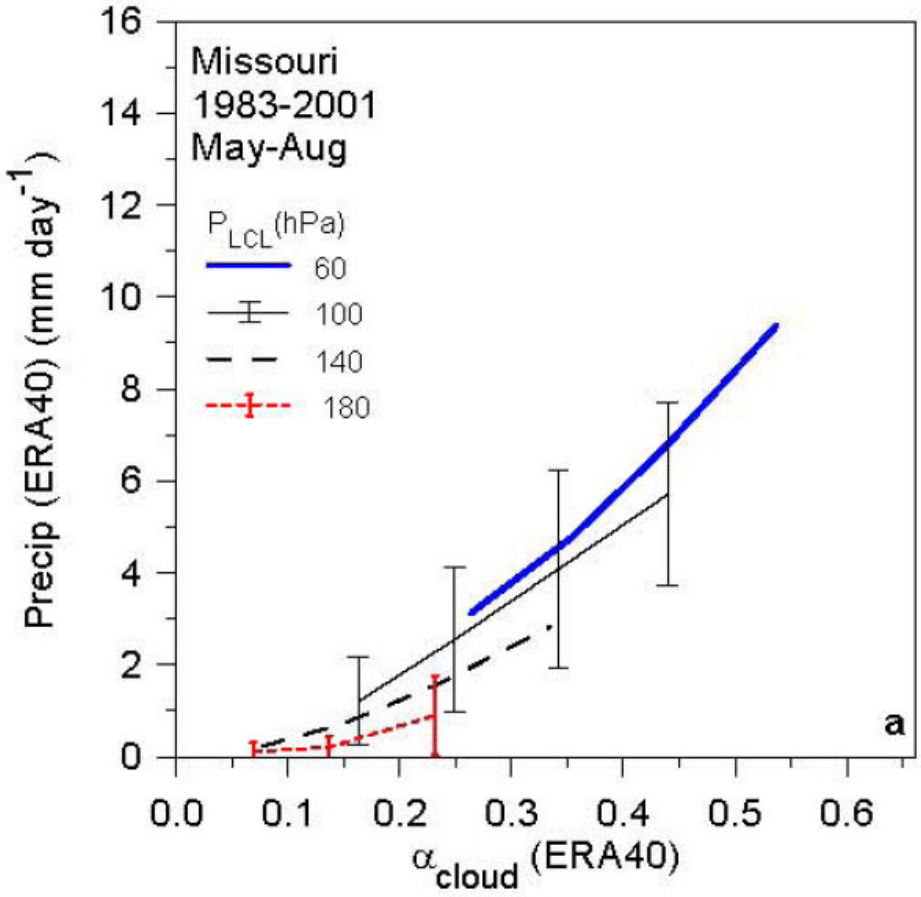


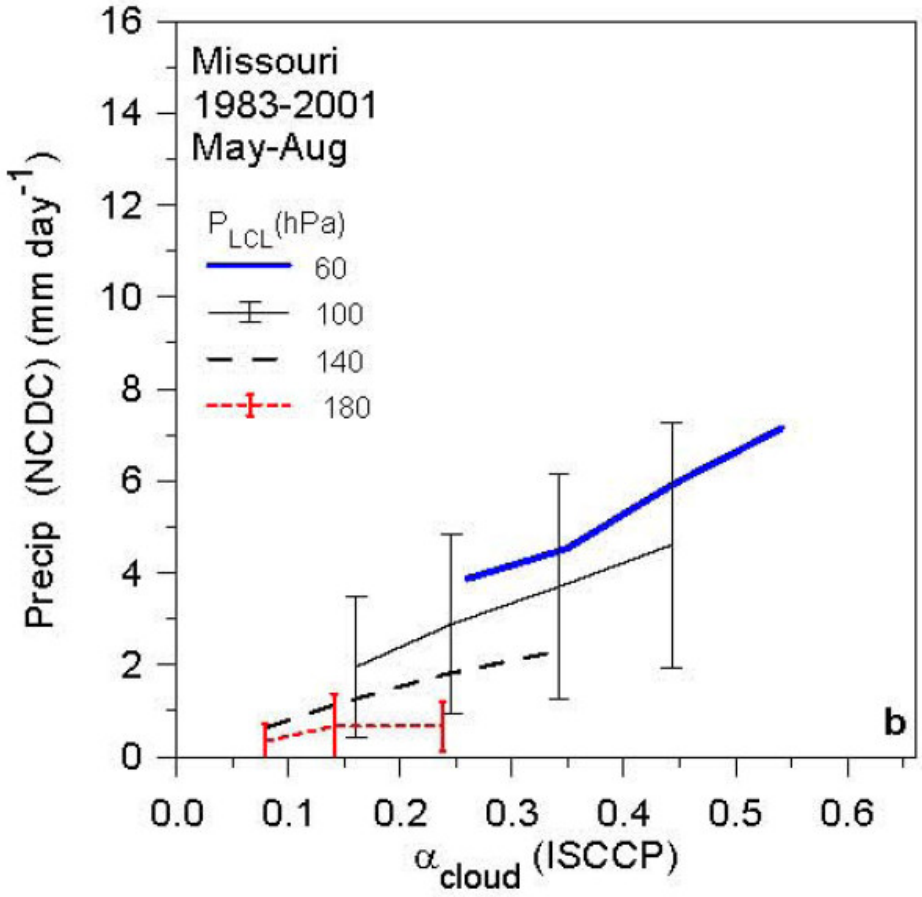


GrADS20\merra\Regional Basins\Daily\daily_Missouri_LCL.gs (Grads Script, grads –l)

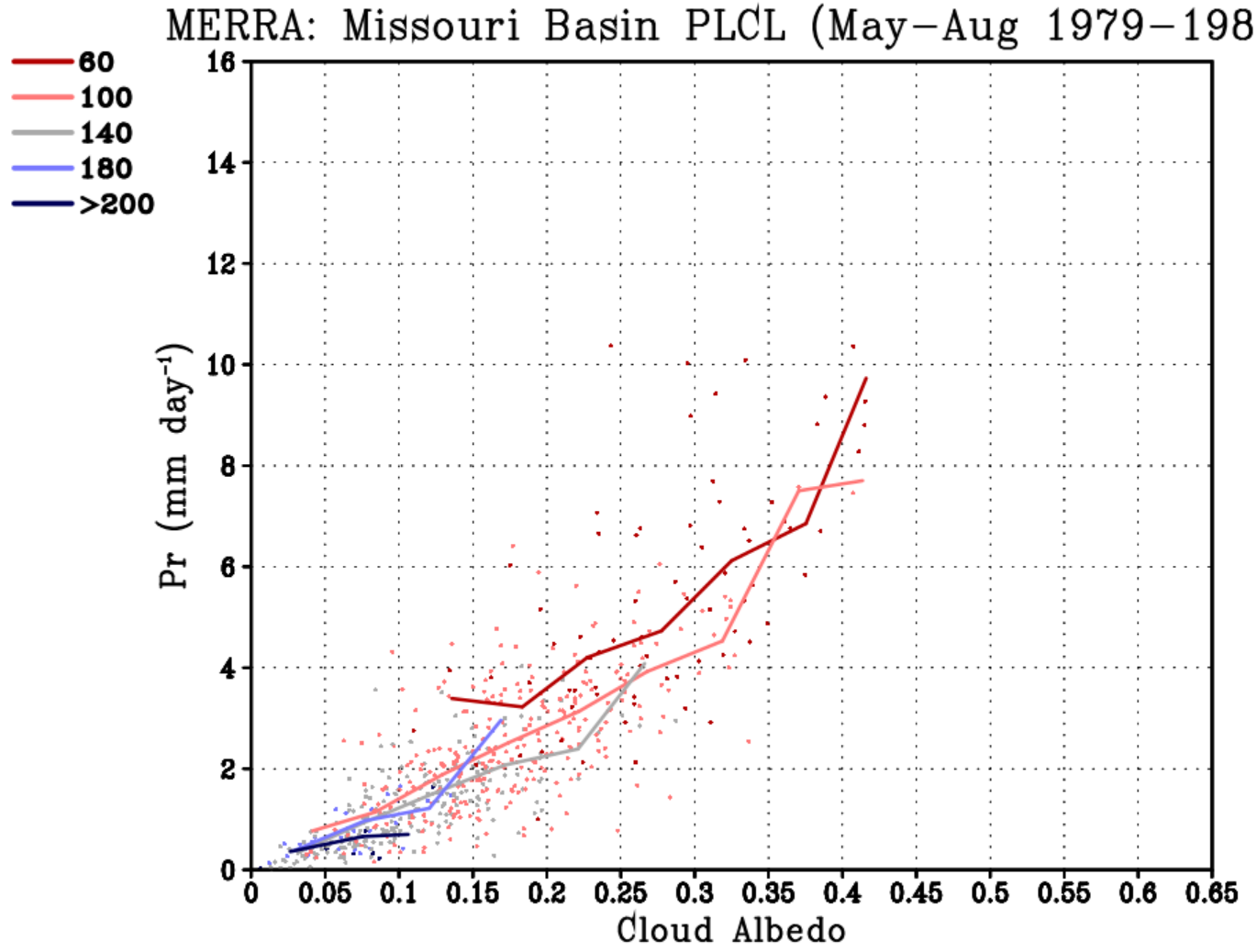
GrADS20\merra\Regional Basins\Daily\daily_Ohio_LCL.gs (Grads Script, grads –l)

Cloud forcing to Precipitation



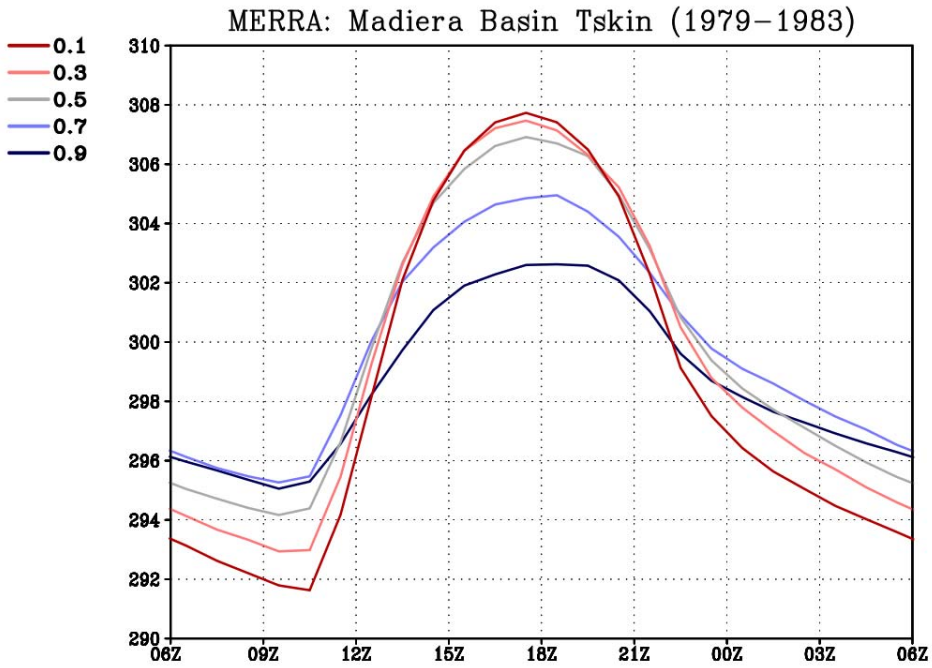


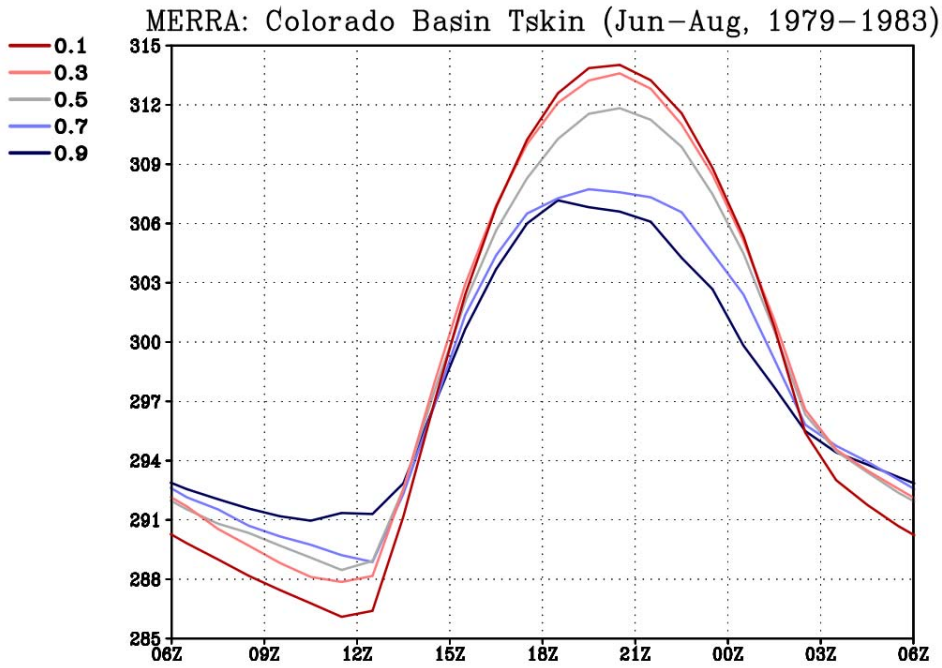
MERRA: Missouri Precip, Cloud Albedo



GrADS20\merra\Regional Basins\Daily\daily_Missouri_acloud_LCL.gs (Grads Script, grads –l)

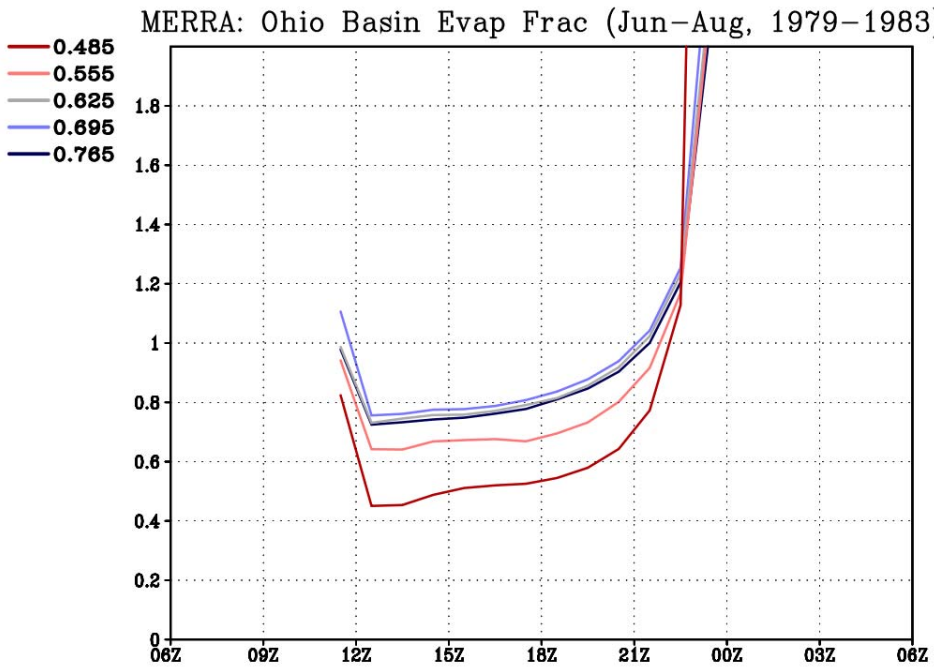
Ts Diurnal Cycle: Cloud Cover

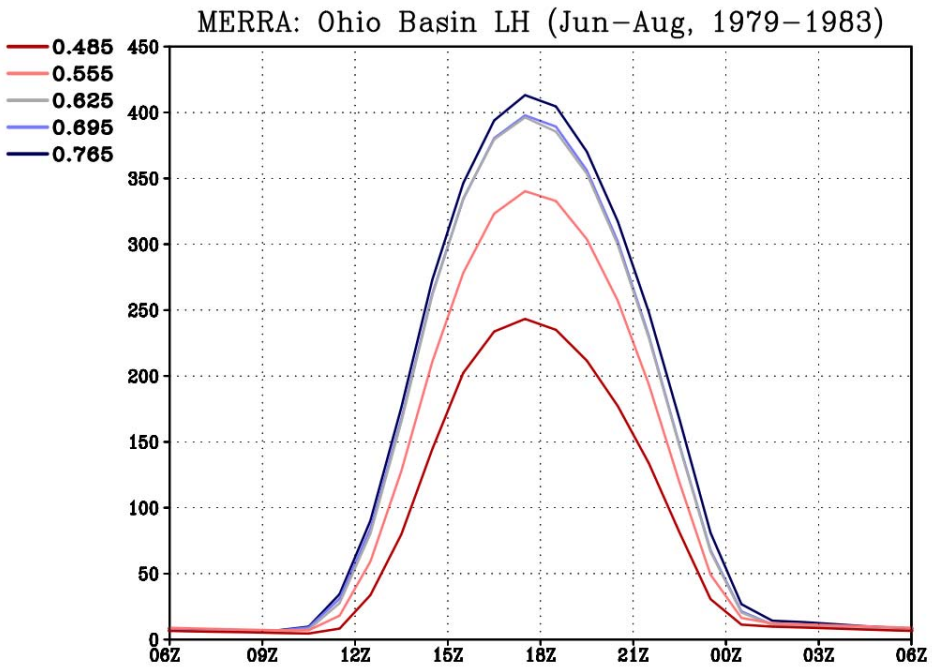


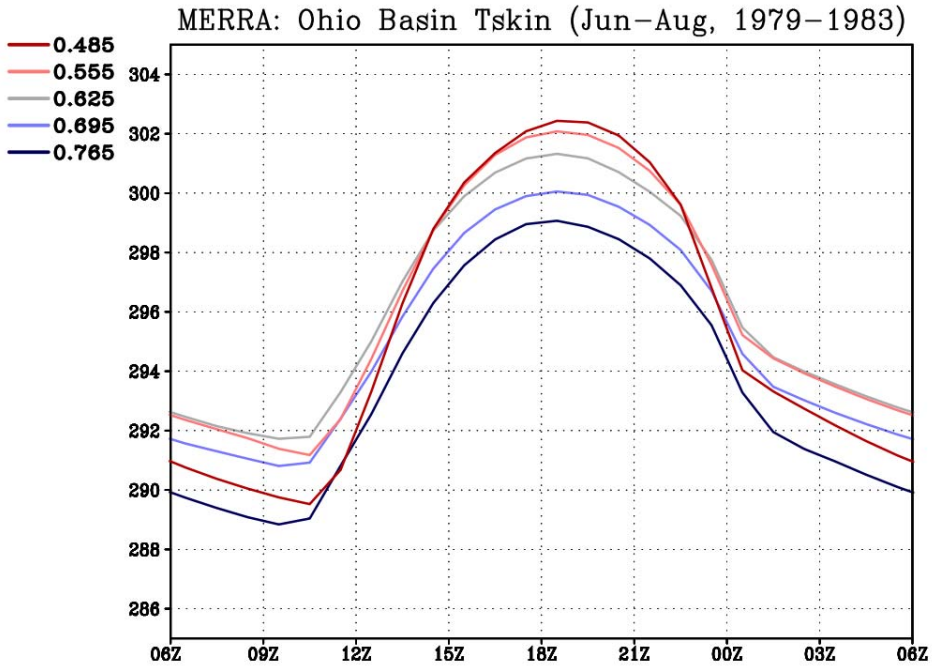


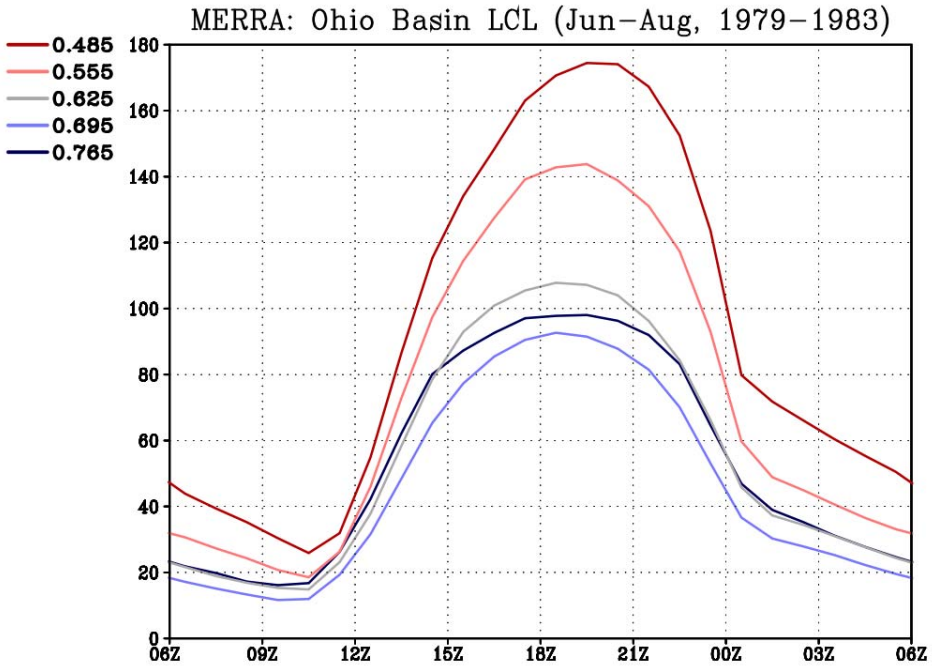
GrADS20\merra\Regional Basins\Diurnal\diurnal_Tskin_Madiera.gs (Grads Script, grads –l)

GrADS20\merra\Regional Basins\Diurnal\diurnal_Tskin_Colorado.gs (Grads Script, grads –l)


MERRA: Ohio Basin Evap Frac (Jun–Aug, 1979–1983)
0.485
0.555
0.625
0.695
0.765
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
06Z
09Z
12Z
15Z
18Z
21Z
00Z
03Z
06Z


MERRA: Ohio Basin LH (Jun–Aug, 1979–1983)
0.485
0.555
0.625
0.695
0.765
450
400
350
300
250
200
150
100
50
0
06Z
09Z
12Z
15Z
18Z
21Z
00Z
03Z
06Z


MERRA: Ohio Basin Tskin (Jun–Aug, 1979–1983)
0.485
0.555
0.625
0.695
0.765
304
302
300
298
296
294
292
290
288
286
06Z
09Z
12Z
15Z
18Z
21Z
00Z
03Z
06Z


MERRA: Ohio Basin LCL (Jun–Aug, 1979–1983)
0.485
0.555
0.625
0.695
0.765
180
160
140
120
100
80
60
40
20
0
06Z
09Z
12Z
15Z
18Z
21Z
00Z
03Z
06Z