

Table 1

*Note: Distance means the approximate distance between SURFRAD/ARM sites with CASTNET or IMPROVE sites.

SURFRAD / ARM	SW Radiation	AOD	CASTNET	Aerosol Concentration	IMPROVE	Aerosol Concentration
BON [Bondville, IL] Elevation : 0.23 km Lat : 40.05° Lon : -88.37°	1995-2010	1997-2010	BVL130 [Bondville, IL] Distance: 0 km Elevation : 0.21 km Lat : 40.05° Lon : -88.37°	1990-2010	BONL1 [Bondville, IL] Distance: 0 km Elevation : 0.21 km Lat : 40.05° Lon : -88.37°	2001-2010
TBL [Table Mountain, CO] Elevation: 1.69 km Lat : 40.13° Lon : -105.24°	1996-2010	1997-2010	ROM406 [Rocky Mtn NP, CO] Distance: 30 km Elevation : 2.7 km Lat : 40.28° Lon : -105.55°	1994-2010	ROMO1 [Rocky Mountain NP, CO] Distance: 30 km Elevation : 2.8 km Lat : 40.28° Lon : -105.55°	1991-2008
GWN [Goodwin Creek, MS] Elevation: 0.1 km Lat : 34.25° Lon : -89.87°	1995-2010	1997-2010	CVL151 [Coffeeville, MS] Distance: 30 km Elevation : 0.1 km Lat : 34.00° Lon : -89.80°	1990-2010	MACA1 [Mammoth Cave NP, KY] Distance: 500 km Elevation : 0.25 km Lat : 37.13° Lon : -86.15°	1992-2010
FPK [Fort Peck, MT] Elevation: 0.63 km Lat : 48.31° Lon : -105.10°	1996-2010	1997-2010	THR422 [Theodore, ND] Distance: 170 km Elevation : 0.85 km Lat : 46.89° Lon : -103.38°	1998-2010	MELA1 [Medicine Lake, MT] Distance: 50 km Elevation : 0.61 km Lat : 48.49° Lon : -104.48°	2000-2010
DRA [Desert Rock, NV] Elevation: 1.01 km Lat : 36.63° Lon : -116.02°	1999-2010	1999-2010	DEV412 [Death Valley, CA] Distance: 85 km Elevation : 0.12 km Lat : 36.51° Lon : -116.85°	1995-2007	DEVA1 [Death Valley NP, CA] Distance: 85 km Elevation : 0.13 km Lat : 36.51° Lon : -116.85°	2000-2010
PSU [Penn State, PA] Elevation: 0.38 km Lat : 40.72° Lon : -77.93°	1999-2010	1999-2009	PSU106 [Penn State, PA] Distance: 0 km Elevation : 0.38 km Lat : 40.72° Lon : -77.93°	1990-2010	WASH1 [Washington DC] Distance: 210 km Elevation : 0.02 km Lat : 38.88° Lon : -77.03°	1990-2010
SGP [South Great Plain, OK] Elevation: 0.31 km Lat : 36.80° Lon : -97.50°	1997-2010	1996-2007	CHE185 [Cherokee, OK] Distance: 270 km Elevation : 0.3 km Lat : 35.75° Lon : -94.67°	2002-2010	CHER1 [Cherokee Nation, OK] Distance: 50 km Elevation : 0.34 km Lat : 36.93° Lon : -97.02°	2003-2010

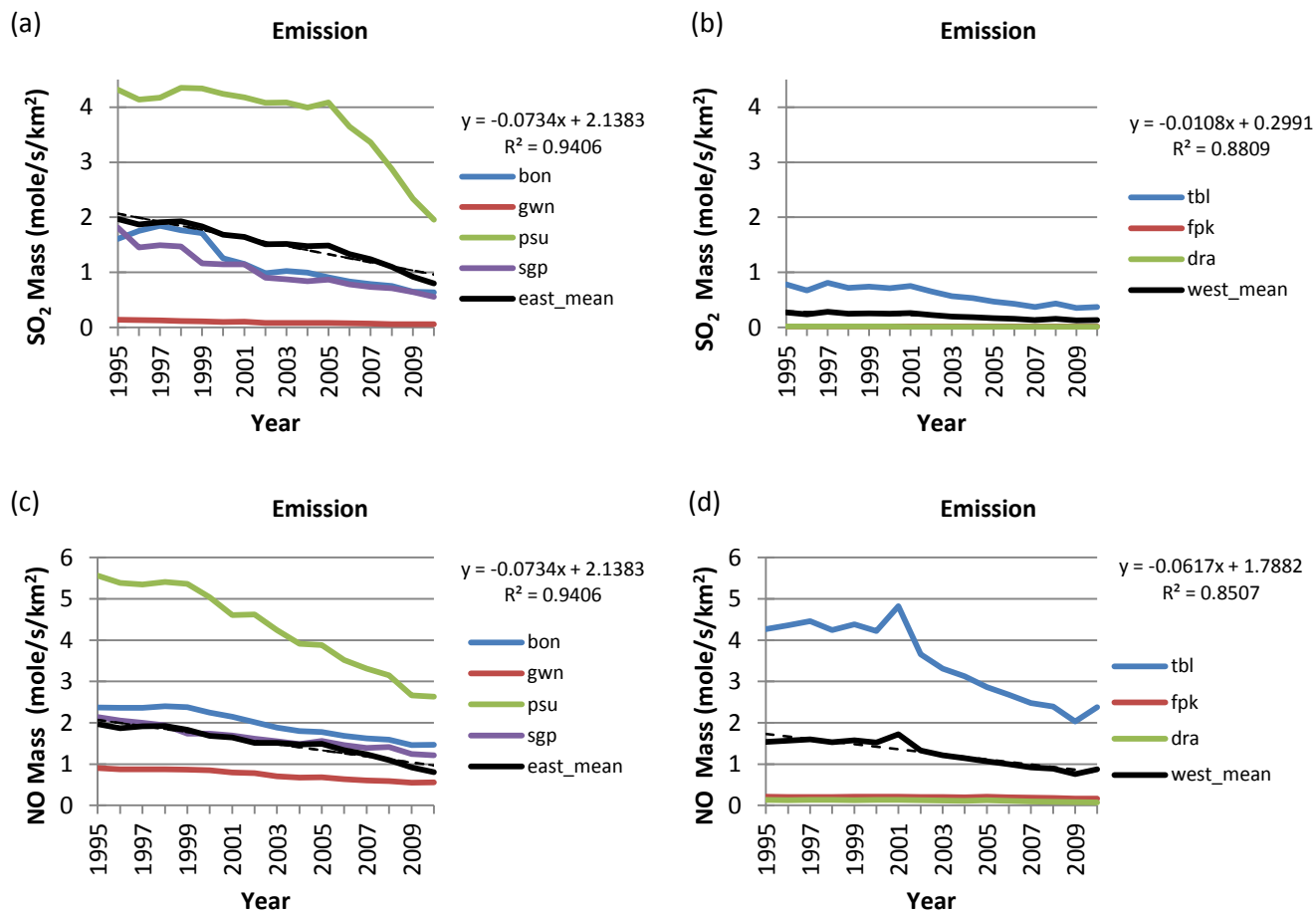


Figure 2: Annual mean of SO₂ (first row) and NO_x (second row) emission for each site (colored line) and the network mean (solid black line) together with the LSF (dash black line) to the network mean. The best-fit equation and coefficient of determination (R²) are given at right in each panel. The left column represent eastern U.S. while the right column represent western U.S.

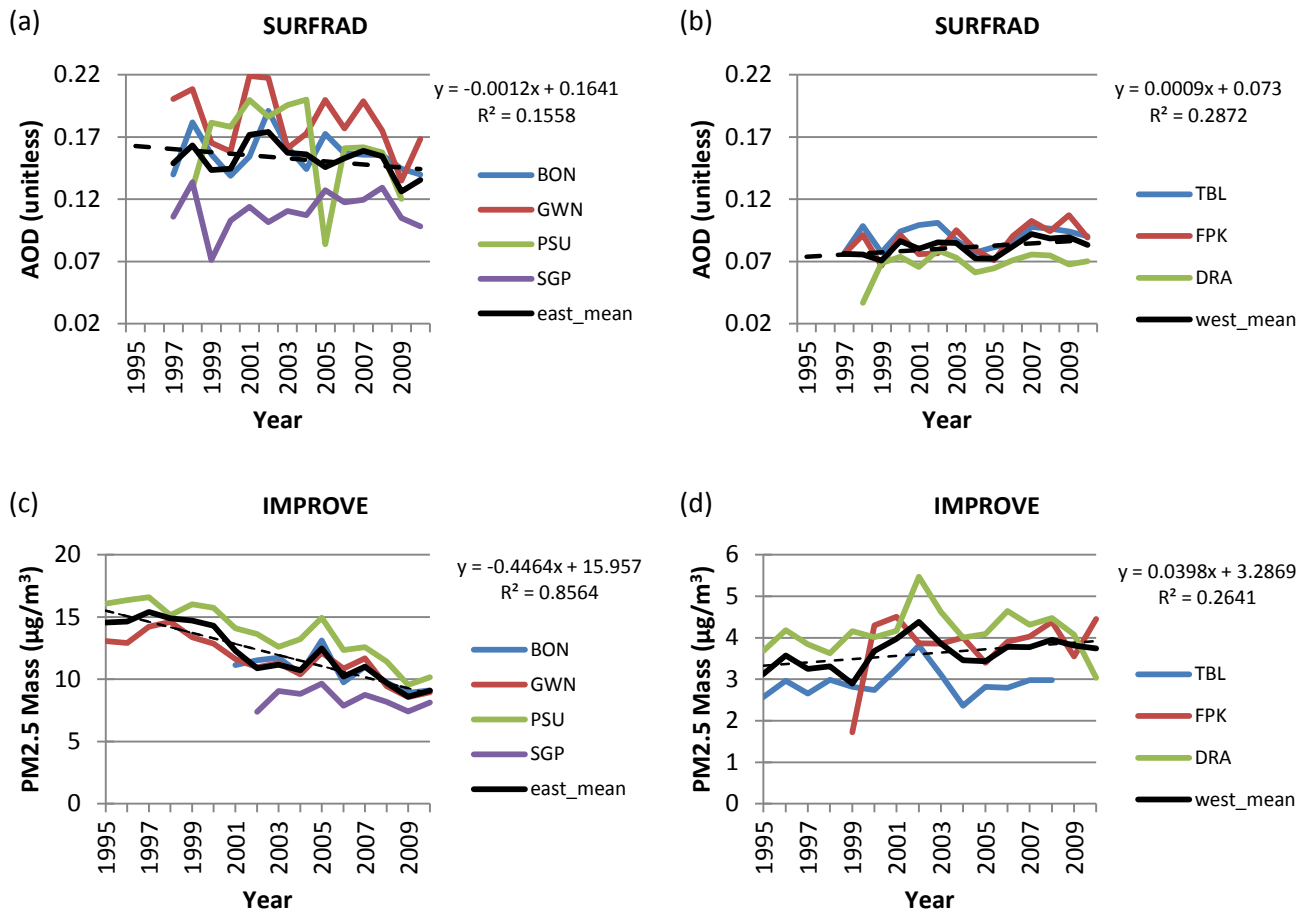


Figure 4: Annual mean of AOD from SURFRAD (first row) and PM_{2.5} from IMPROVE (second row) for each site (colored line) and the network mean (solid black line) together with the LSF (dash black line) to the network mean. The best-fit equation and coefficient of determination (R²) are given at right in each panel. The left column represent eastern U.S. while the right column represent western U.S.

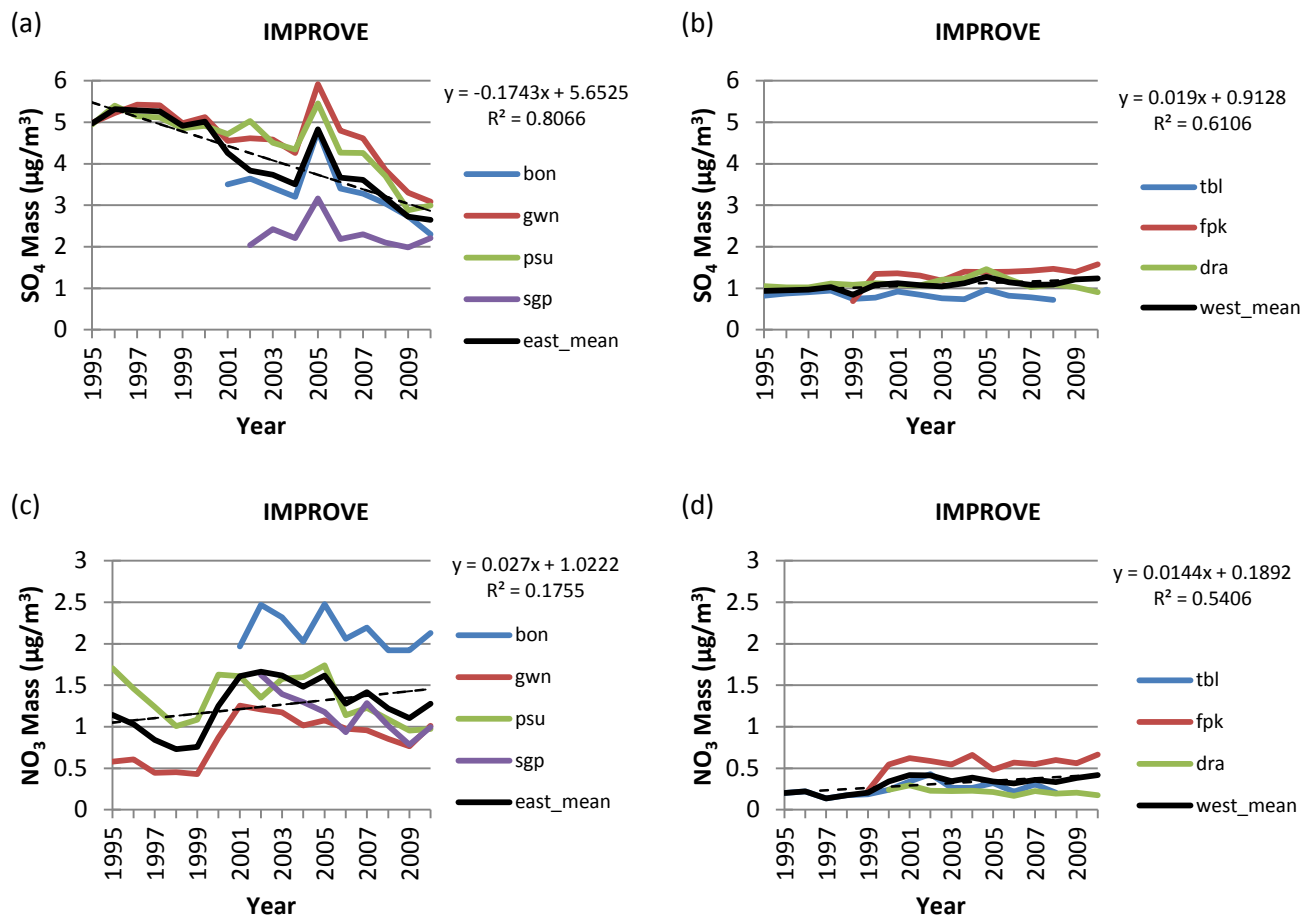


Figure 5: Annual mean of SO_4 (first row) and NO_3 (second row) from IMPROVE for each site (colored line) and the network mean (solid black line) together with the LSF (dash black line) to the network mean. The best-fit equation and coefficient of determination (R^2) are given at right in each panel. The left column represent eastern U.S. while the right column represent western U.S.

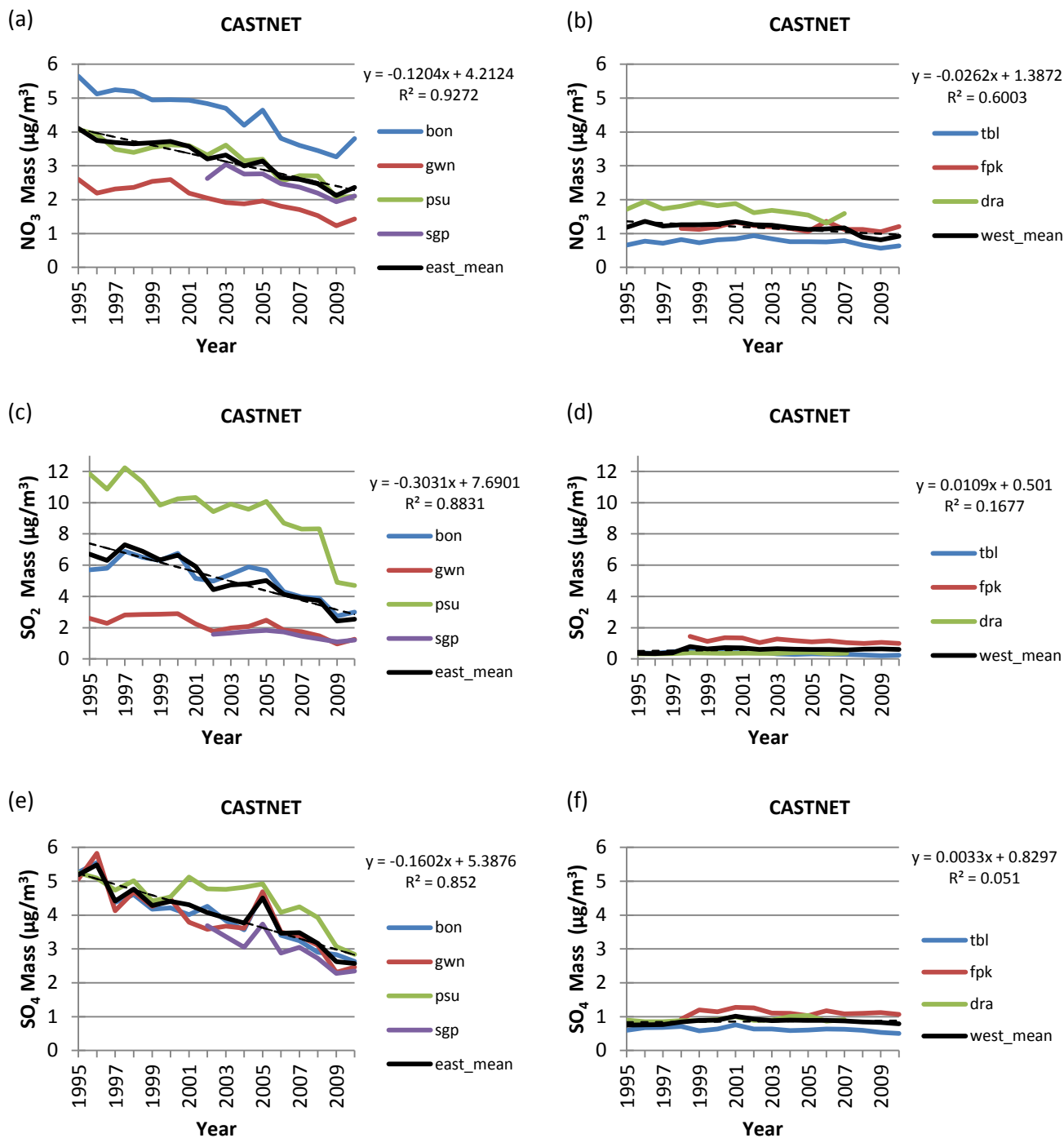


Figure 6: Annual mean of SO_4 (first row), SO_2 (second row) and NO_3 (third row) from CASTNET for each site (colored line) and the network mean (solid black line) together with the LSF (dash black line) to the network mean. The best-fit equation and coefficient of determination (R^2) are given at right in each panel. The left column represent eastern U.S. while the right column represent western U.S.

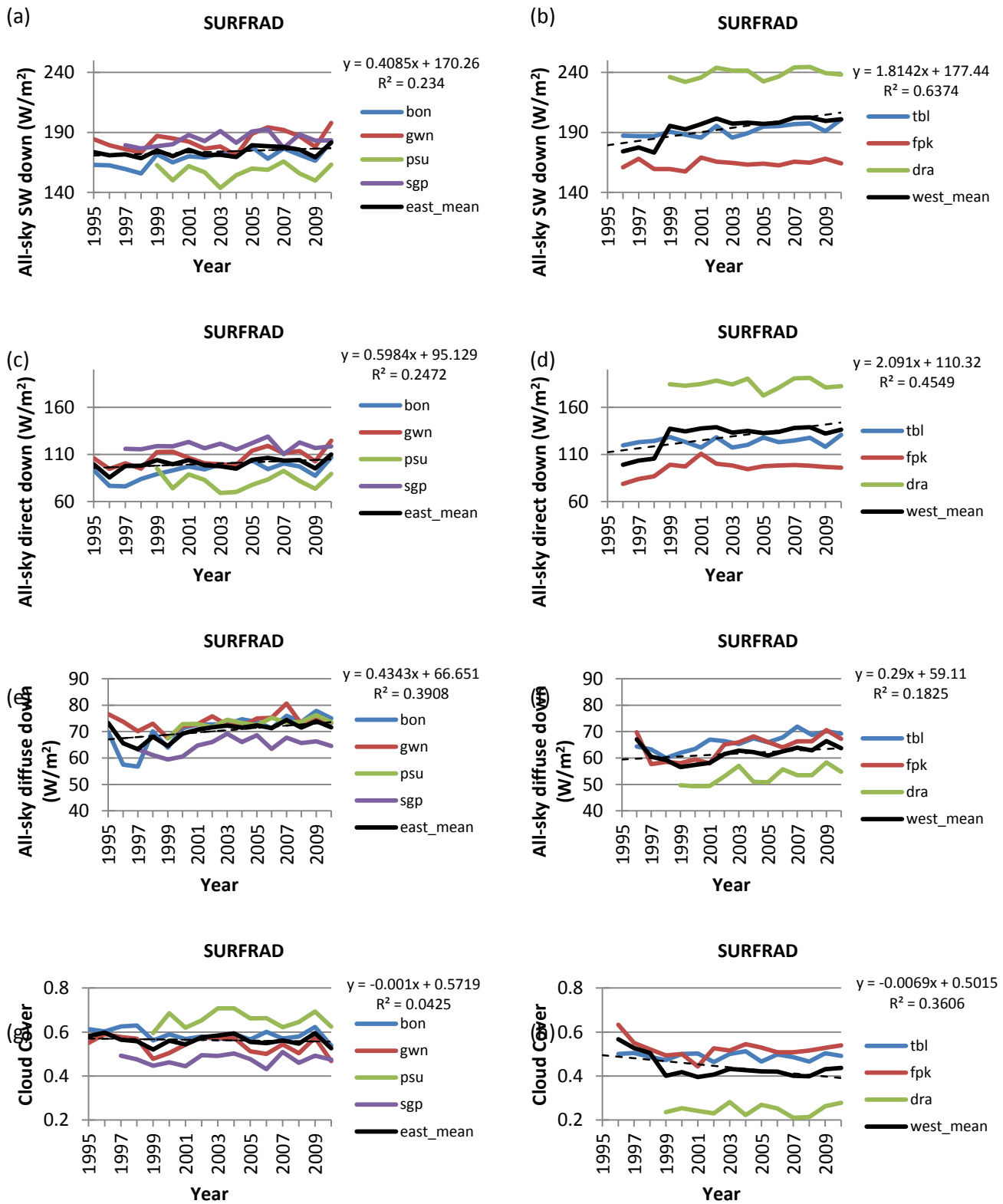


Figure 7: Annual mean of all-sky downwelling SW (first row), direct SW (second row), diffuse SW (third row) and cloud cover fraction (fourth row) from SURFRAD for each site (colored line) and the network mean (solid black line) together with the LSF (dash black line) to the network mean. The best-fit equation and coefficient of determination (R^2) are given at right in each panel. The left column represents eastern U.S. while the right column represents western U.S.

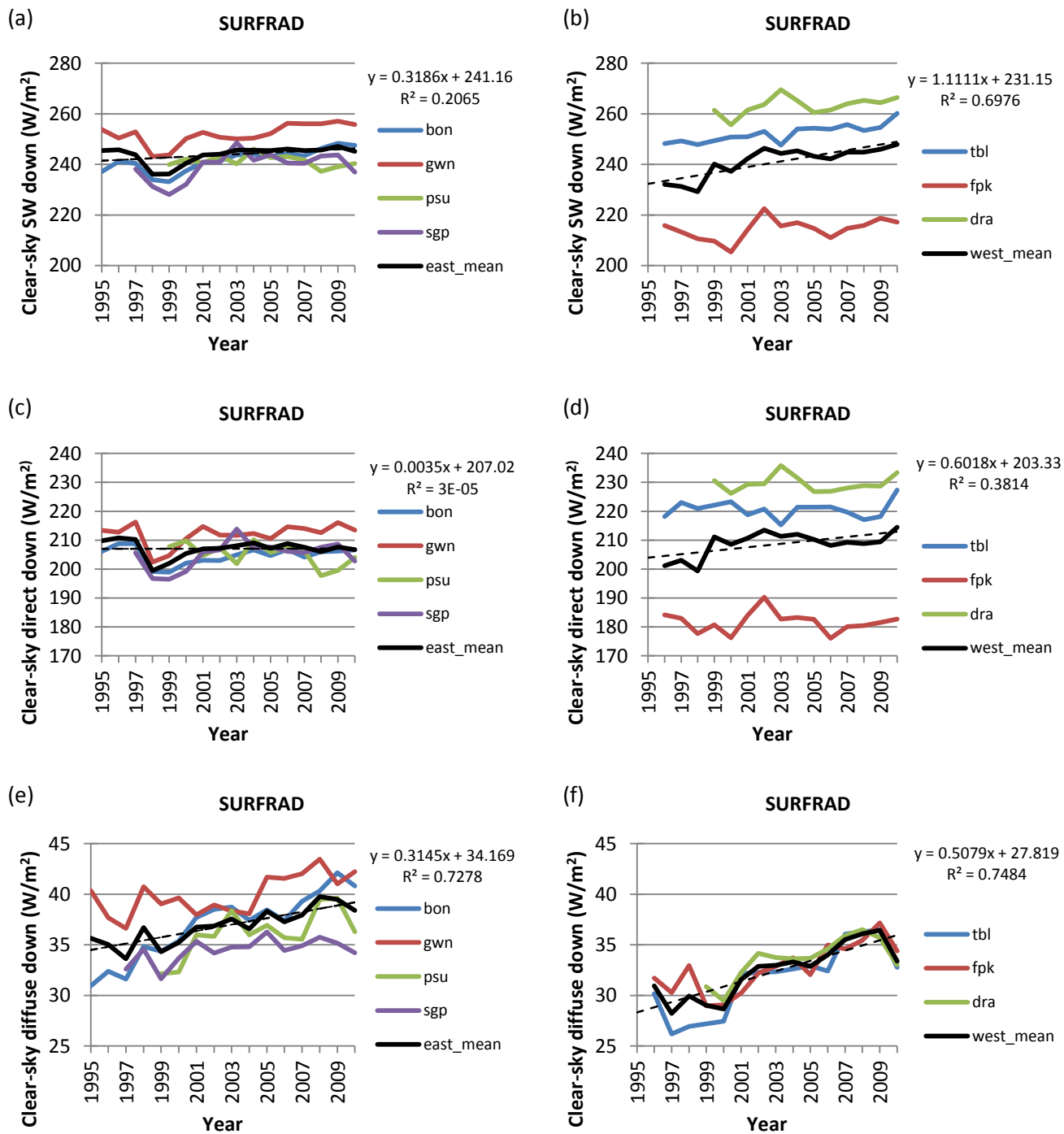


Figure 8: Annual mean of clear-sky downwelling SW (first row), direct SW (second row) and diffuse SW (third row) from SURFRAD for each site (colored line) and the network mean (solid black line) together with the LSF (dash black line) to the network mean. The best-fit equation and coefficient of determination (R^2) are given at right in each panel. The left column represent eastern U.S. while the right column represent western U.S.

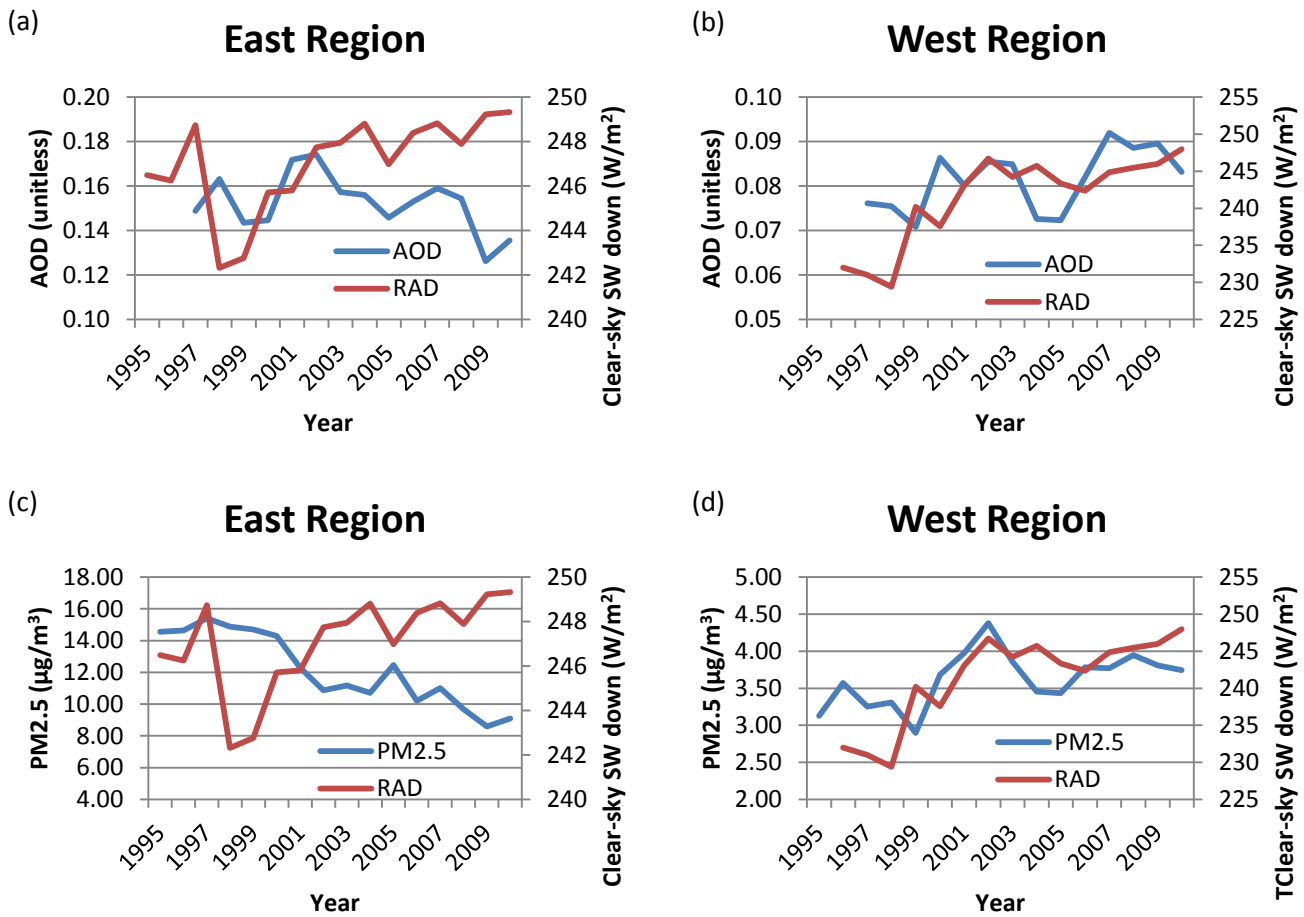


Figure: Panel (a-b) represent annual mean of AOD versus clear-sky SW radiation. Panel (c-d) represent annual mean of PM2.5 versus clear-sky SW radiation. Left side is for east region while right side is for west region.