Supporting Information for

A 1 km soil moisture data over eastern CONUS generated through assimilating SMAP data into the Noah-MP land surface model

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Introduction

This supporting information includes Figures S1 which illustrate the SM evaluations using the observational data measured by the SCAN network. The 2-D histograms for (a) SMAPDA, (b) ERA5-Land, (c) GLASS SM, (d) SMAP AM, and (e) GLEAMv4.1 are displayed. In Figure S2, the RMSEs computed for each site in SCAN network are marked by color-shaded dots. Similarly, the results of Biases are demonstrated in Figure S3. Figure S4 display the SM RMSE (against SCAN data) anomaly timeseries over the year of 2016 for each evaluated SM estimate. Similar to Figure S2, Figure S5 illustrates the site-wise RMSEs but for the OKMet sites.
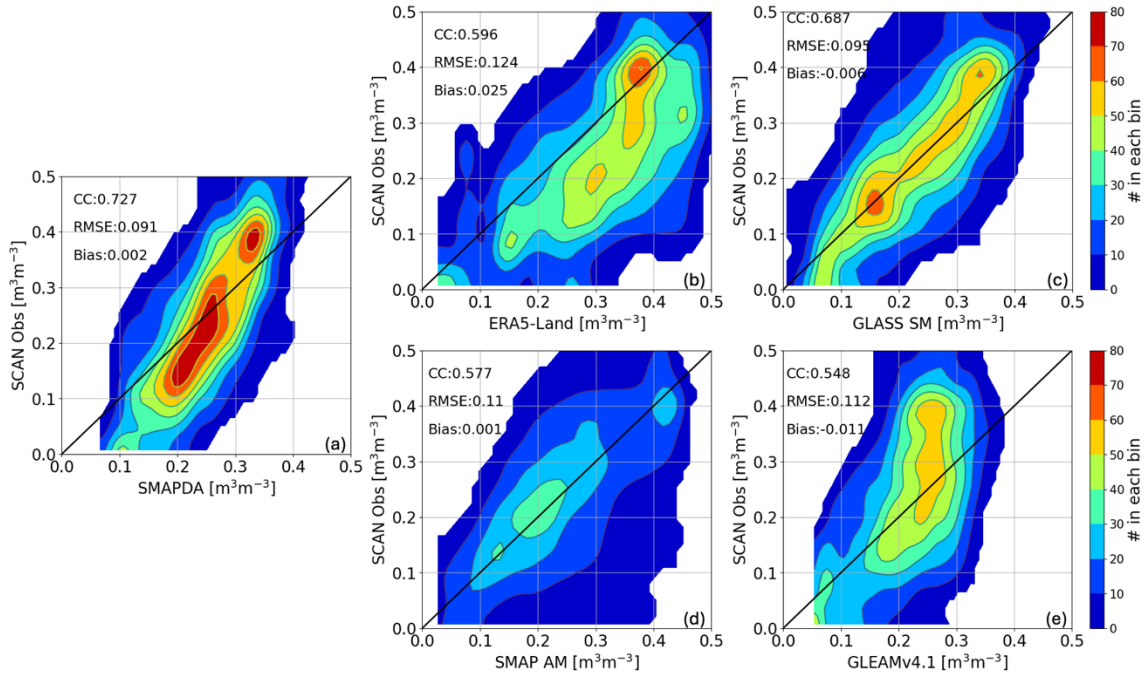
Figure S1. 2-D histograms summarizing the evaluation results using the observational data measured by the SCAN network. Panels (a) to (e) represent results of SMAPDA, ERA5-Land, GLASS SM, SMAP AM, and GLEAMv4.1. 50 bins are used to generate the 2D histograms. Correlation coefficient (CC), RMSE, and Bias are given in the upper left corner of each panel.
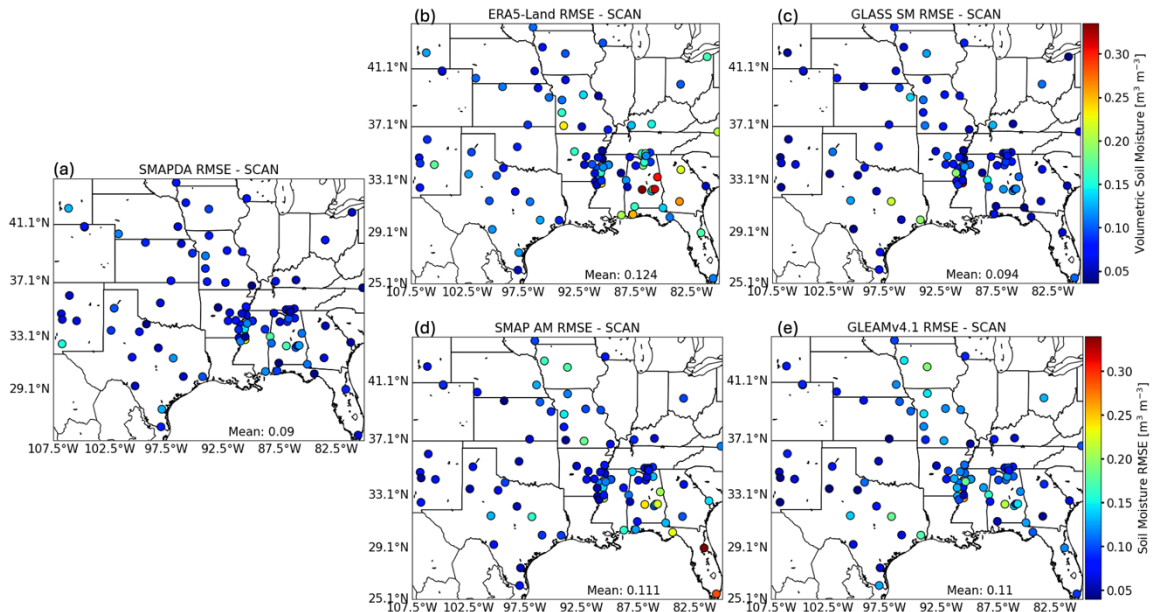

Figure S2. Site-wise RMSE computed using observations from the SCAN observations. Results for (a) SMAPDA, (b) ERA5-Land, (c) GLASS SM, (d) SMAP AM, and (e) GLEAMv4.1 are illustrated.
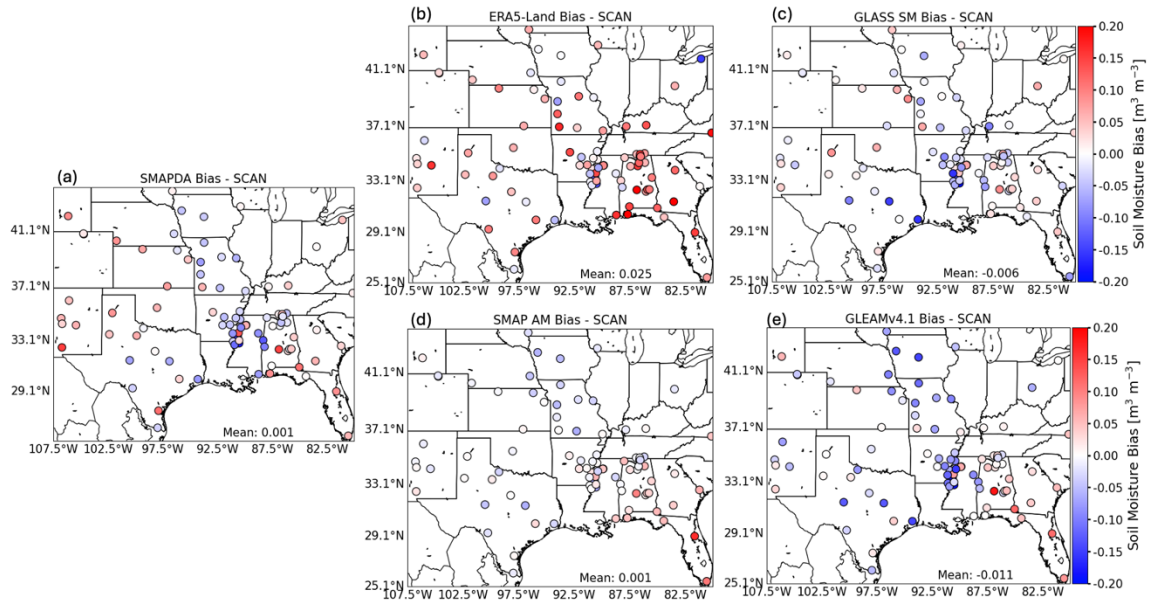
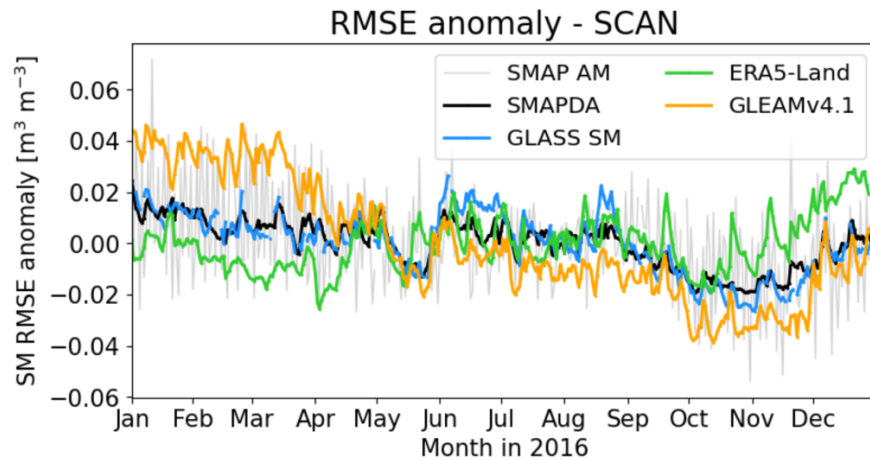Figure S3. Similar to Figure S2, but for illustrations of Bias.

Figure S4. The SM RMSE anomaly timeseries computed against SCAN observations during 2016. Results of SMAP AM, ERA5-Land, SMAPDA, GLEAMv4.1, and GLASS SM are denoted by colored lines as indicated in the legend.
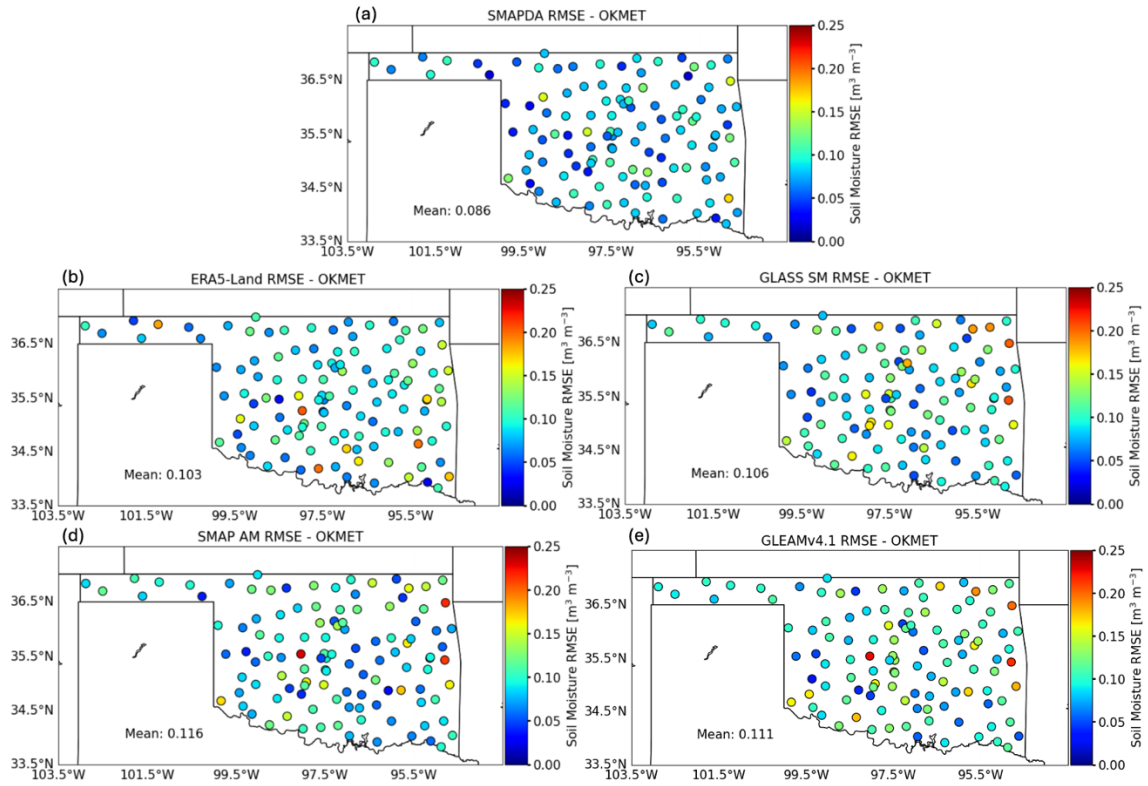
Figure S5. Site-wise RMSE computed using observations from the OKMet observations. Results for (a) SMAPDA, (b) ERA5-Land, (c) GLASS SM, (d) SMAP AM, and (e) GLEAMv4.1 are illustrated.