

Supplementary material

Comparison with LandFlux-EVAL

Here we compare the mean annual STEAM evaporation with the LandFlux-EVAL evaporation product for the period 1989-2005 (described in Mueller et al., (2013) and downloaded at <http://www.iac.ethz.ch/groups/seneviratne/research/LandFlux-EVAL>). Figure S1 shows the 1:1 line of STEAM against LandFlux-EVAL evaporation products for the entire world. The least square line of STEAM evaporation is close to the merged synthesis, diagnostic and reanalysis evaporation, but higher than the merged land surface model evaporation. The spread is large when STEAM is plotted against the merged diagnostic and the reanalysis data products, but more limited against the merged land surface data product. Figure S2 shows the 1:1 line for each climate zone against the LandFlux EVAL merged synthesis product.

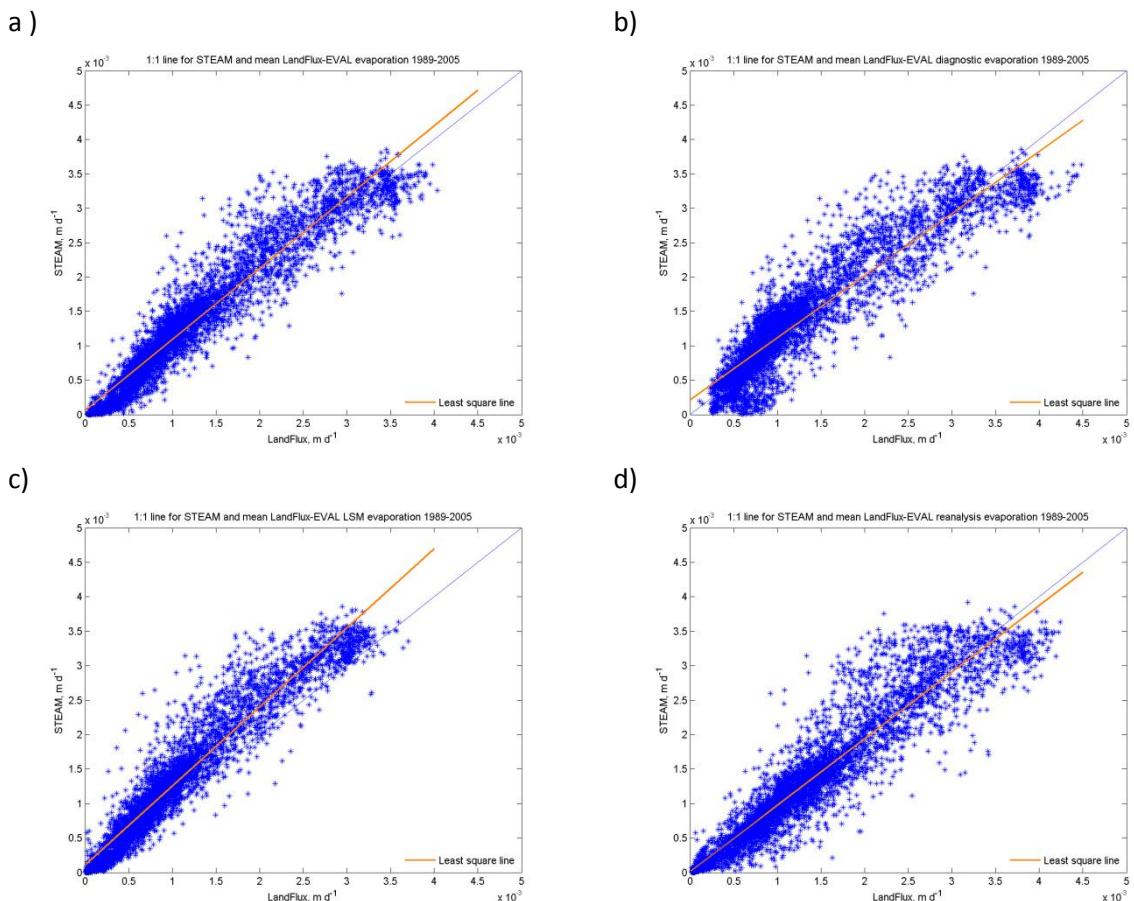


Figure S1 STEAM evaporation plotted against LandFlux-EVAL a) merged synthesis, b) diagnostic, c) land surface model, and d) reanalysis evaporation. Dots represent STEAM mean grid cell evaporation (1.5° latitude $\times 1.5^\circ$ longitude).

a) b)

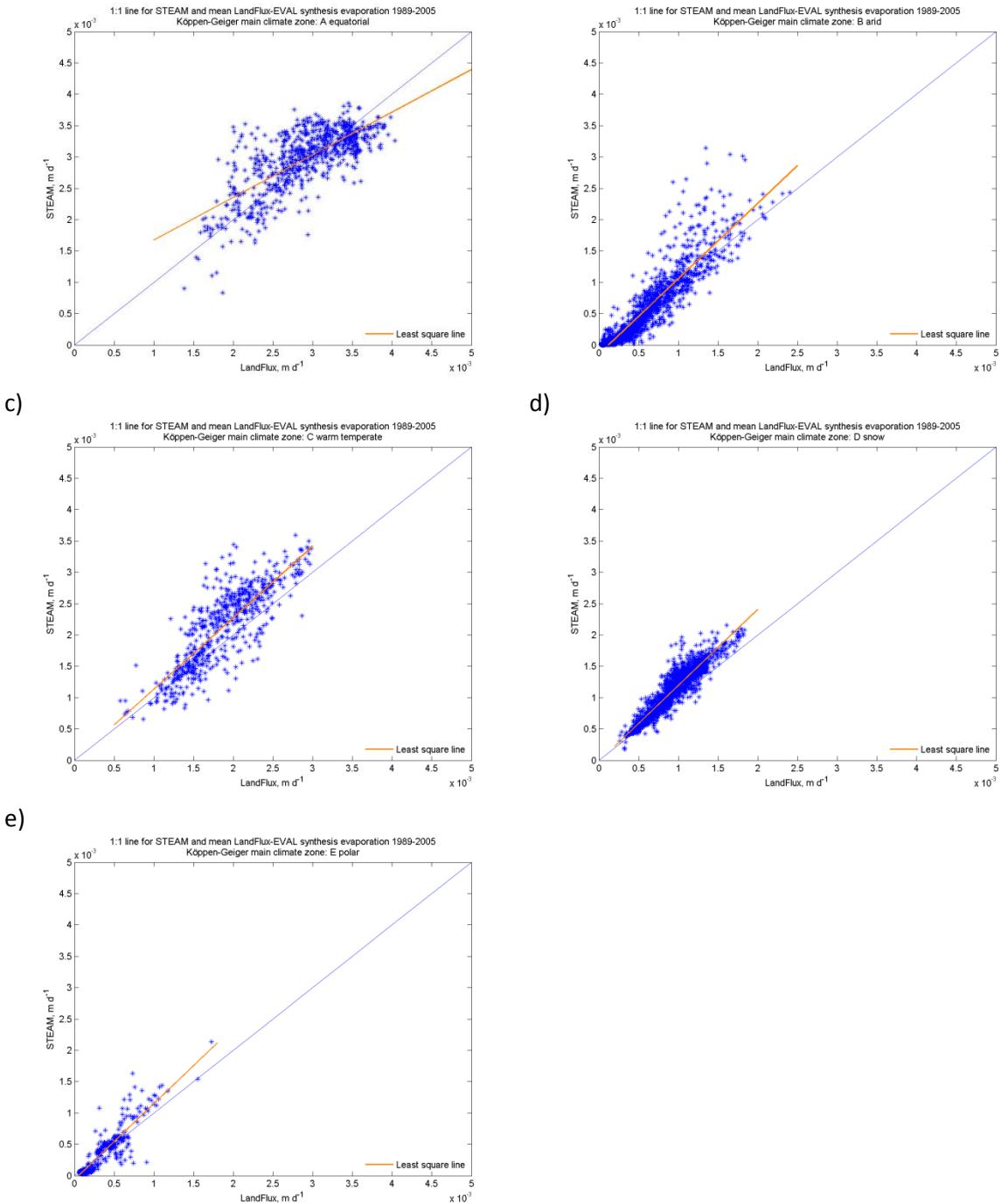


Figure S2 STEAM evaporation plotted against LandFlux-EVAL merged synthesis evaporation for the Köppen-Geiger a) A equatorial , b) B arid, c) C warm temperate, d) D snow, and e) E polar main climate zone. Dots represents STEAM mean evaporation in grid cells (1.5° latitude $\times 1.5^\circ$ longitude).

Reference

Mueller, B., Hirschi, M., Jimenez, C., Ciais, P., Dirmeyer, P. A., Dolman, A. J., Fisher, J. B., Jung, M., Ludwig, F., Maignan, F., Miralles, D. G., McCabe, M. F., Reichstein, M., Sheffield, J., Wang, K., Wood, E. F., Zhang, Y. and Seneviratne, S. I.: Benchmark products for land evapotranspiration: LandFlux-EVAL multi-data set synthesis, *Hydrol. Earth Syst. Sci.*, 17(10), 3707–3720, doi:10.5194/hess-17-3707-2013, 2013.