Supplement of

Portable system for characterizing greenhouse gas analyzers for sensitivity to water vapor

Liu et al.

Correspondence to: Yunsong Liu (yzl6376@psu.edu)

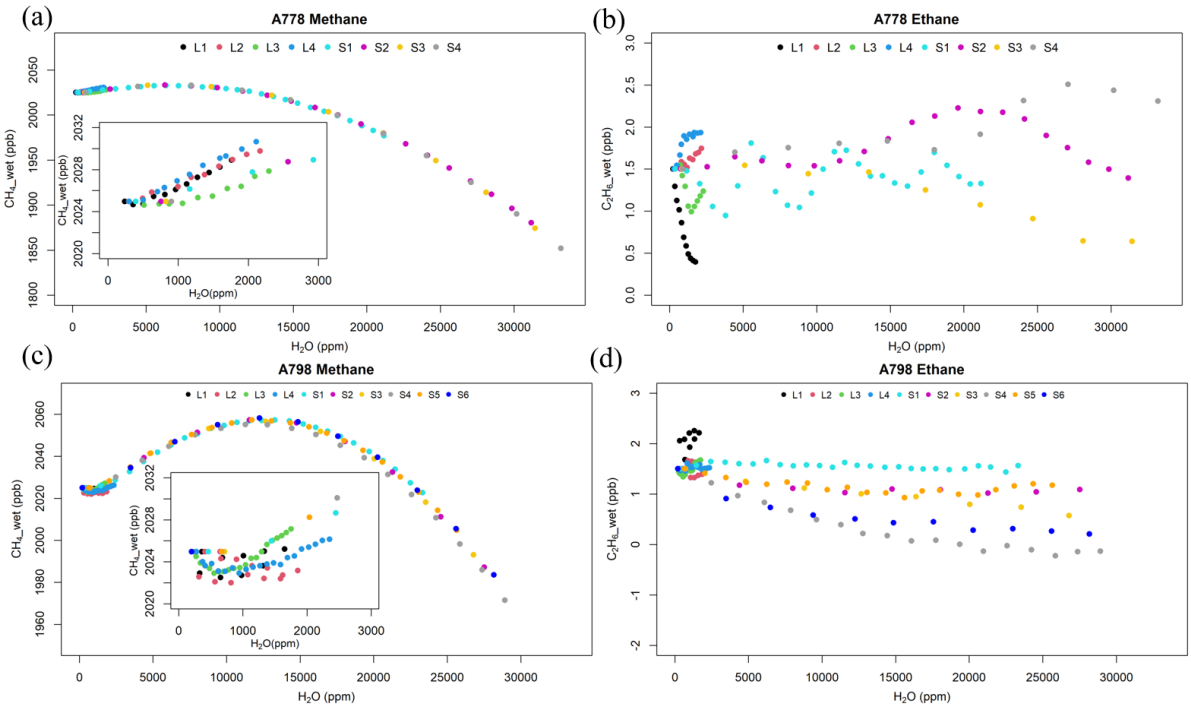

Figure S1. (a-d) The uncorrected (wet) CH_4 and uncorrected (wet) C_2H_6 measurements as a function of H_2O mole fraction for analyzers A778 and A798 across all conducted tests. (a-b) corresponds to analyzer A778, and (c-d) corresponds to analyzer A798. An offset correction was applied for each test. Insets in (a) and (c) show an expanded view of the low water vapor region (H_2O < 3000 ppm).

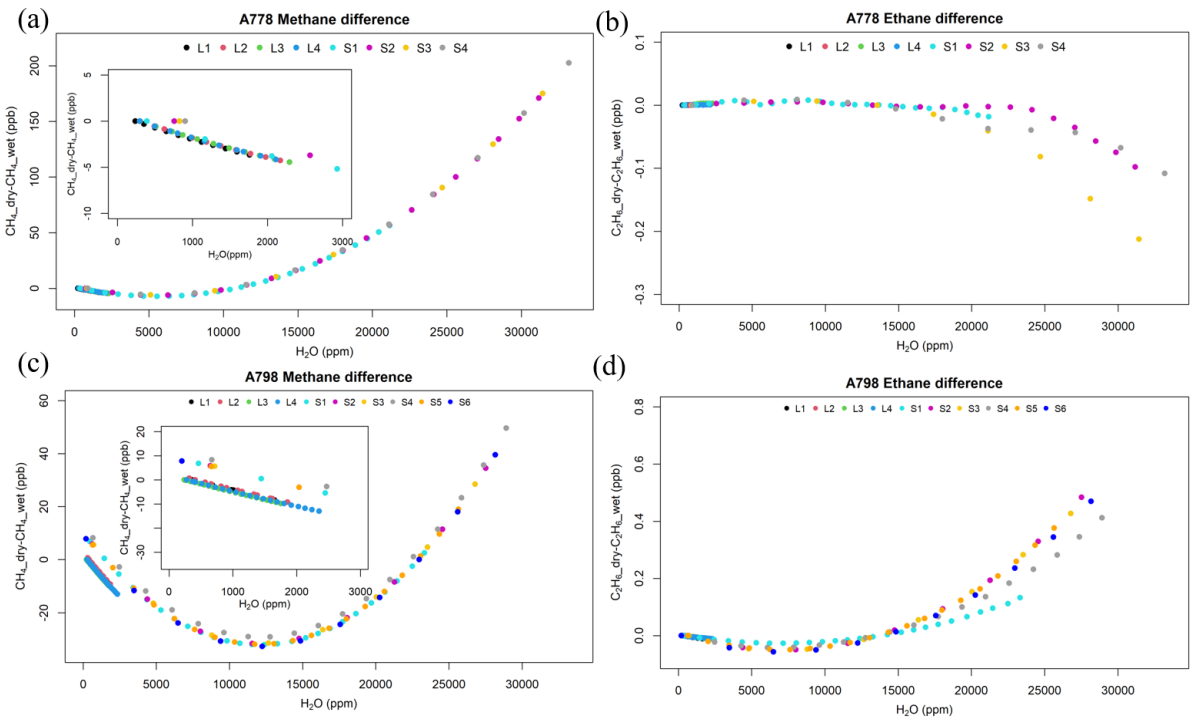

Figure S2. (a) and (c) The difference of manufacturer corrected (dry) CH_4 and uncorrected (wet) CH_4 as a function of H_2O mole fraction for analyzers A778 and A798 across all conducted tests. (b) and (d) The difference of manufacturer corrected (dry) C_2H_6 and uncorrected (wet) C_2H_6 as a function of H_2O mole fraction for analyzers A778 and A798 across all conducted tests. Insets in (a) and (c) show an expanded view of the low water vapor region (H_2O < 3000 ppm). Note that drift in X_{wet} affects the difference between X_{wet} and X_{dry}, based on Eq. 1.

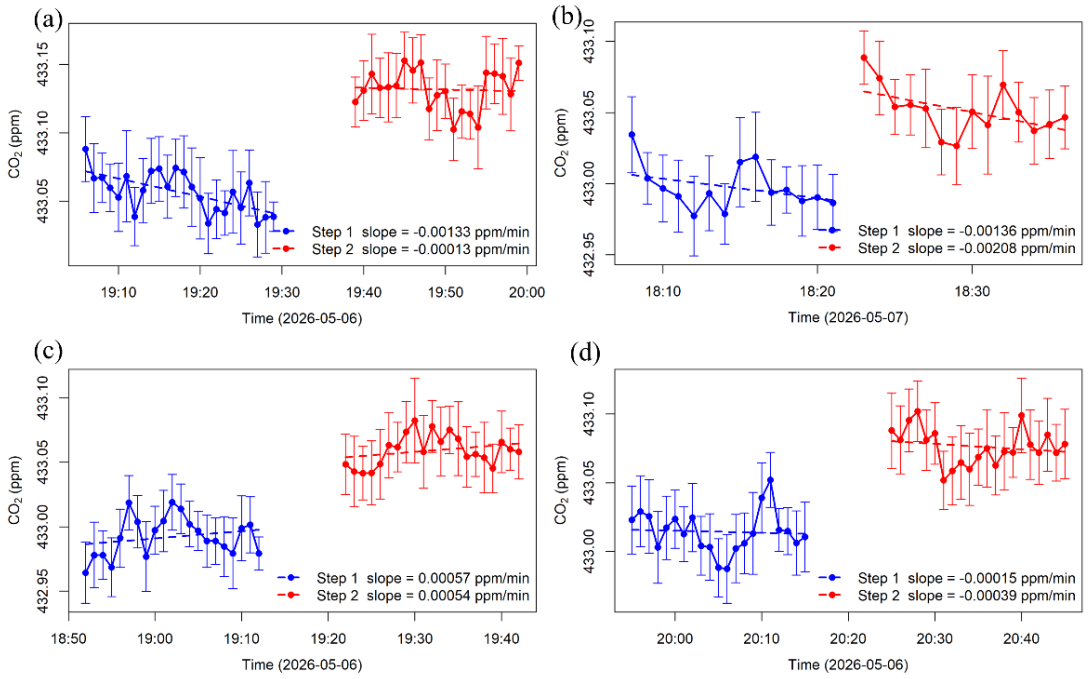

Figure S3. (a-d) Long step (about 25-min) tests for the Picarro CFKADS2025 at H_2O mole fractions of 1% (blue) and 1.5% (red). The dashed blue and red lines indicate linear fits for the 1% and 1.5% H_2O steps, respectively. The slope values of the fits are shown in the legend. Note that (a-b) used "old" water that had been used for many tests over several months and (c-d) used new distilled water.