

## Supplementary material of

# On the diurnal, weekly, seasonal cycles and annual trends in atmospheric CO<sub>2</sub> at Mount Zugspitze, Germany during 1981–2016

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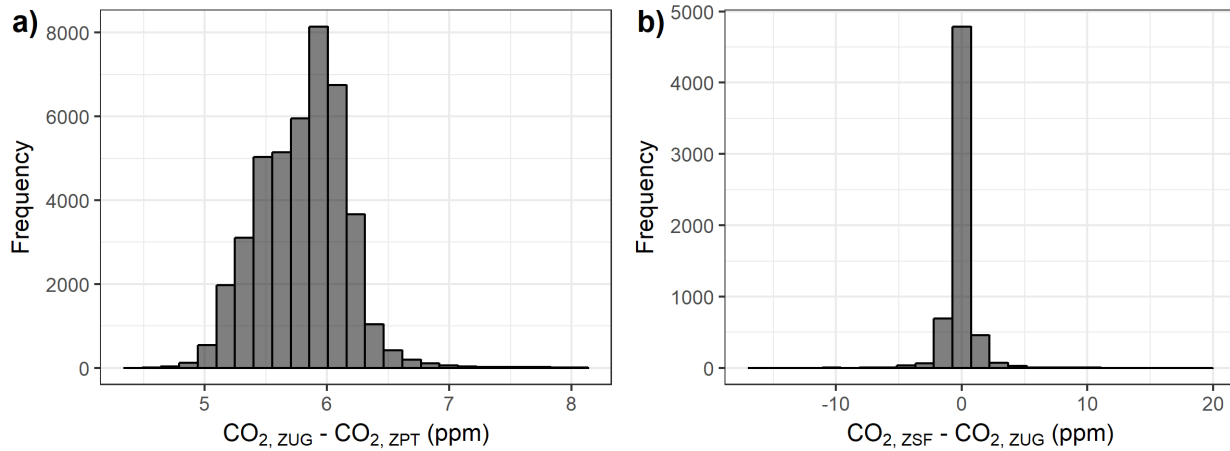


a)

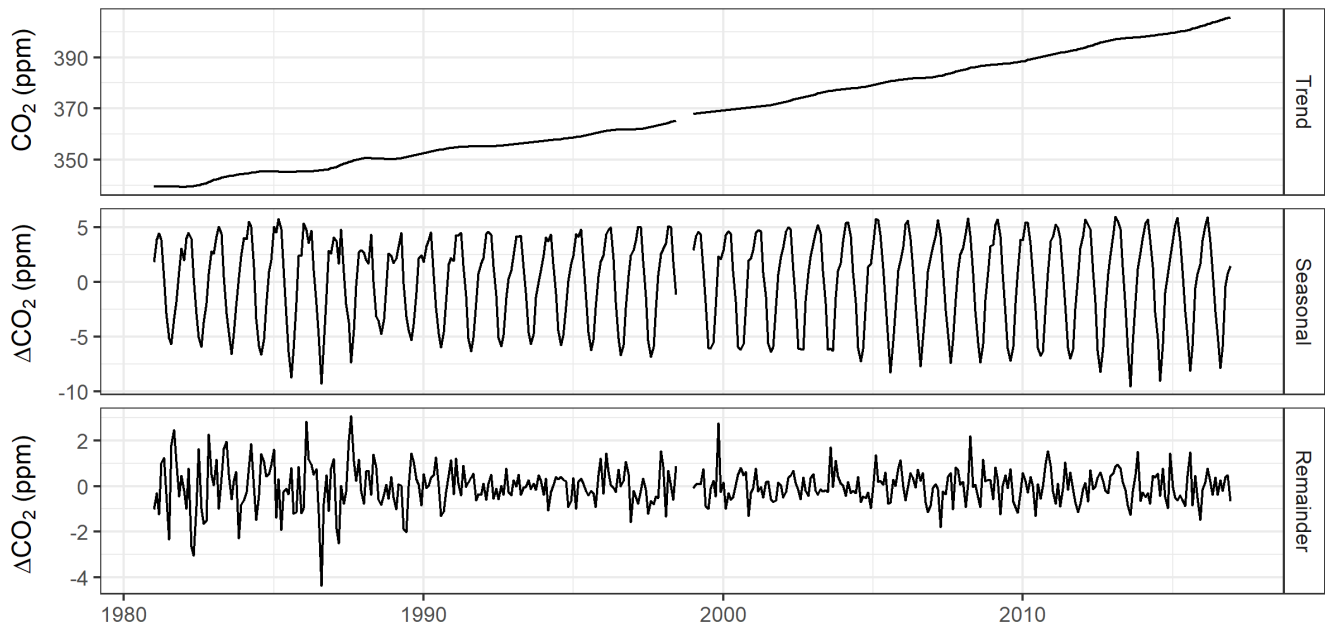


b)

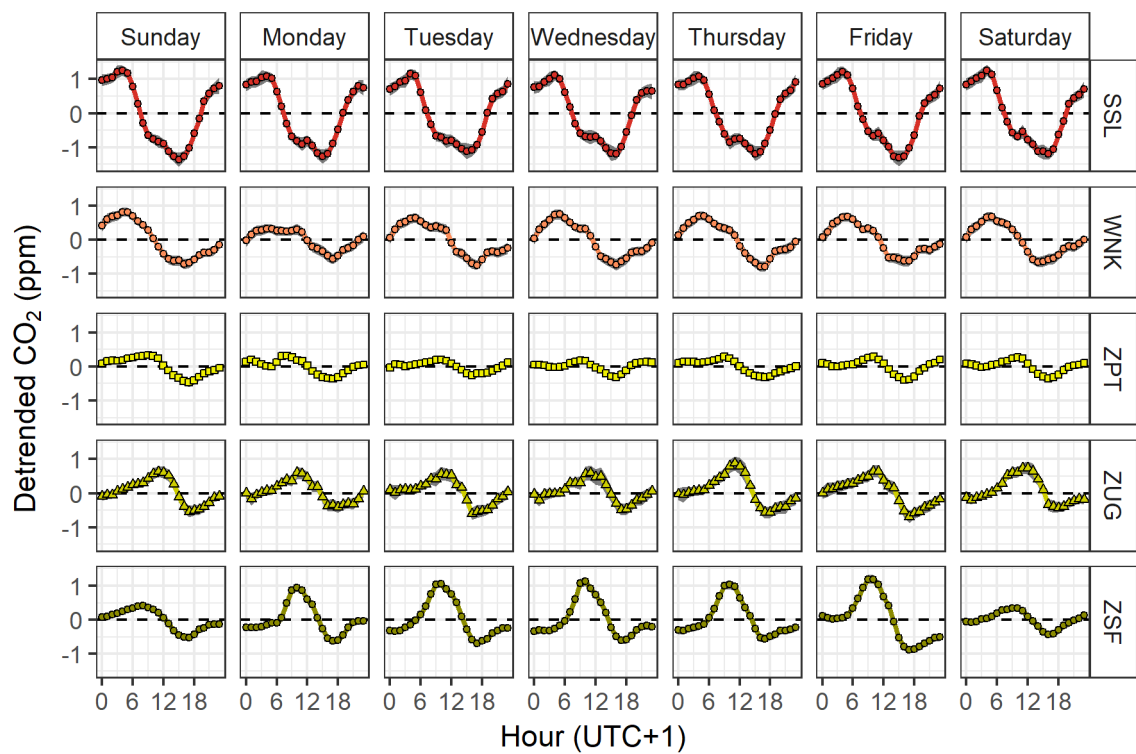
**Figure S1: Instrumental setups at ZSF, a) Modified HP 6890 with Gas Chromatography (GC); b) Picarro EnviroSense 3000i with Cavity Ring-down Spectroscopy (CRDS).**



**Figure S2: a) Histogram for the offsets between CO<sub>2</sub> measurements at ZPT and ZUG for the period of 1995–1997. b) Histogram of the offsets between CO<sub>2</sub> measurements at ZUG and ZSF for the period of April to December 2001.**



**Figure S3: STL-decomposed results of CO<sub>2</sub> measurements at Mount Zugspitze sites.**



**Figure S4: Detrended mean CO<sub>2</sub> diurnal cycles by sites and days of the week. Uncertainties of 95% confidence intervals are shown by the shaded areas.**