A Database of Aircraft Measurements of Carbon Monoxide (CO) with High Temporal and Spatial Resolution during 2011 – 2021

Chaoyang Xue[1], Gisèle Krysztofiak[1], Vanessa Brocchi[1], Stéphane Chevrier[1], Michel Chartier[1], Patrick Jacquet[1], Claude Robert[1], Valéry Catoire[1*]

[1]Laboratoire de Physique et Chimie de l'Environnement et de l'Espace (LPC2E), CNRS – Université Orléans – CNES (UMR 7328), 45071 Orléans cedex 2, France

1. Flights during the SHIVA campaign

The five transfer flights are only shown in Figure 20 in the main text.
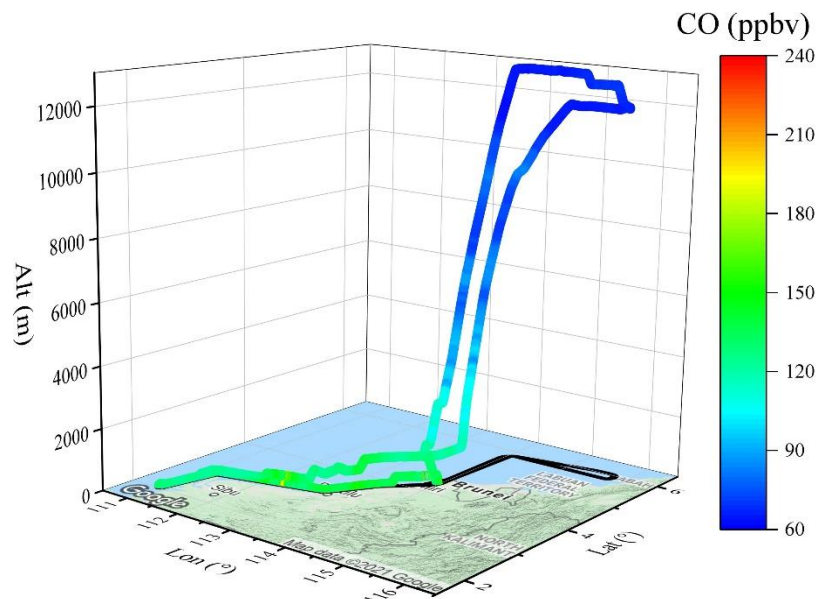
Figure S1: Flight trajectory colored by CO levels on flight-20111116_1. Map copyright: © GoogleMap.
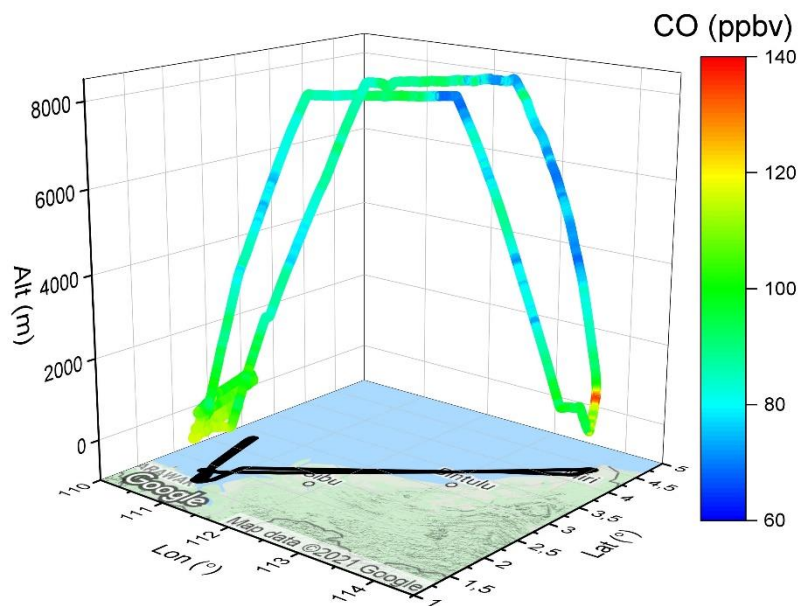
Figure S2: Flight trajectory colored by CO levels on flight-20111119_1. Map copyright: © GoogleMap.
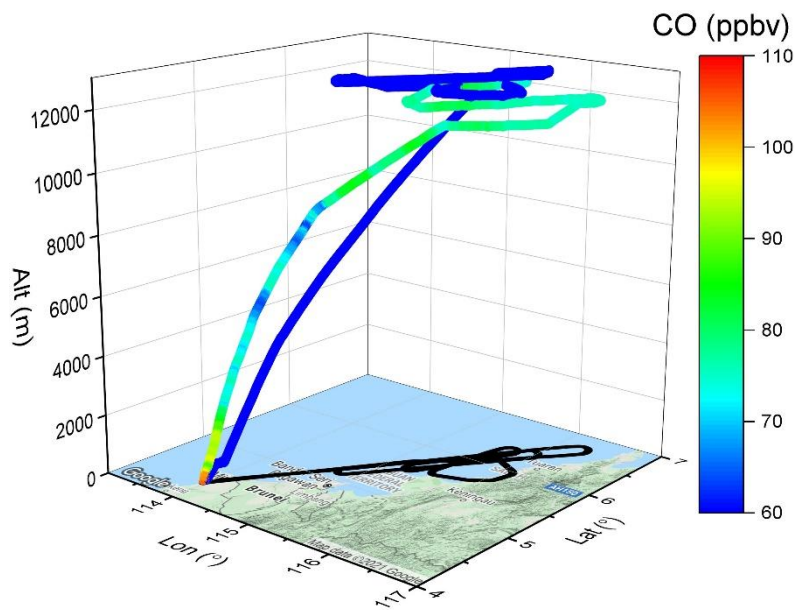
Figure S3: Flight trajectory colored by CO levels on flight-20111119_2. Map copyright: © GoogleMap.
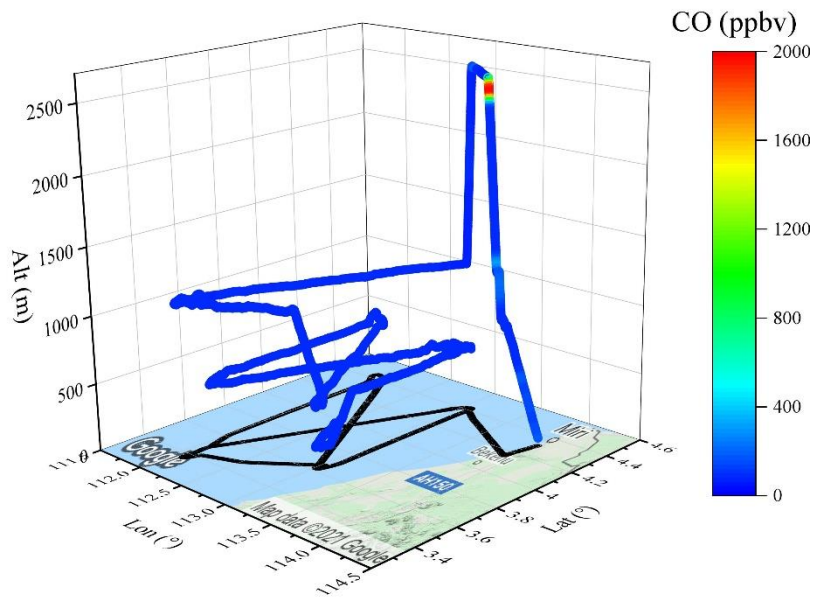
Figure S4: Flight trajectory colored by CO levels on flight-20111121_1. Map copyright: © GoogleMap.
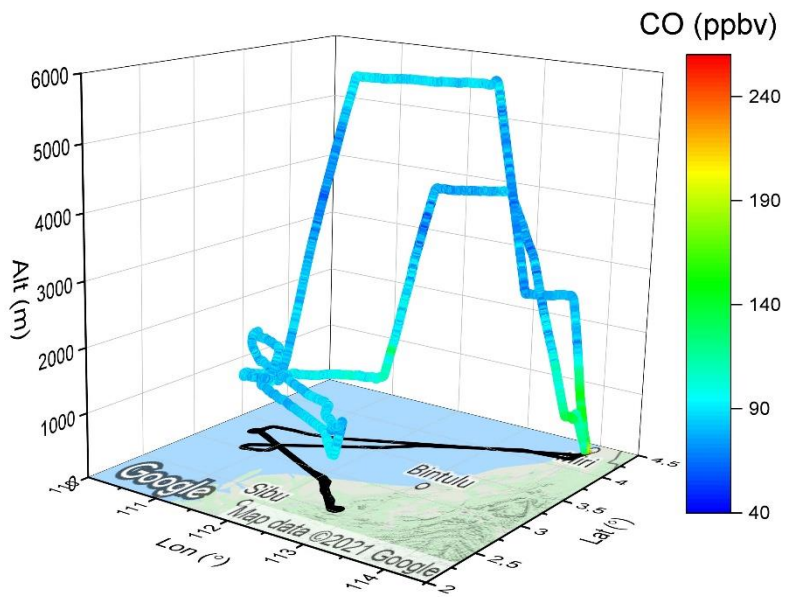
Figure S5: Flight trajectory colored by CO levels on flight-20111122_1. Map copyright: © GoogleMap.
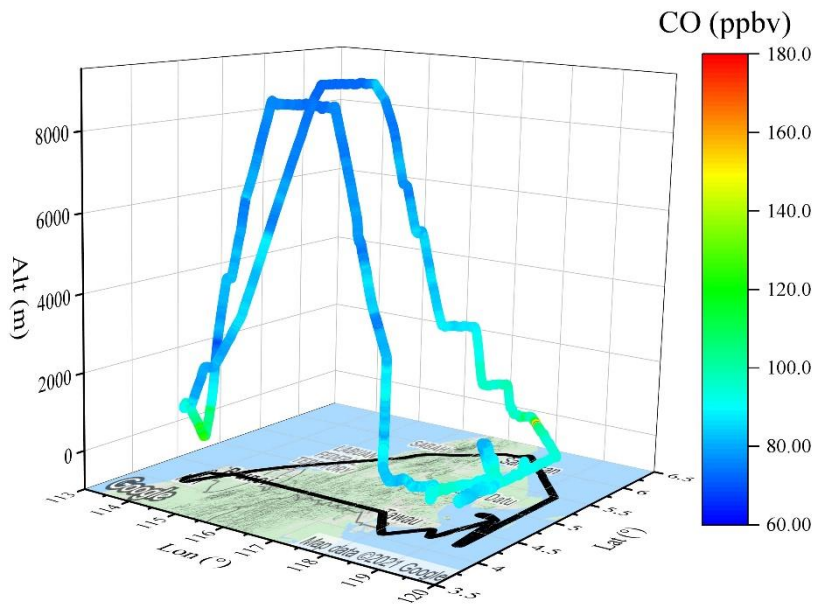
Figure S6: Flight trajectory colored by CO levels on flight-20111123_1. Map copyright: © GoogleMap.
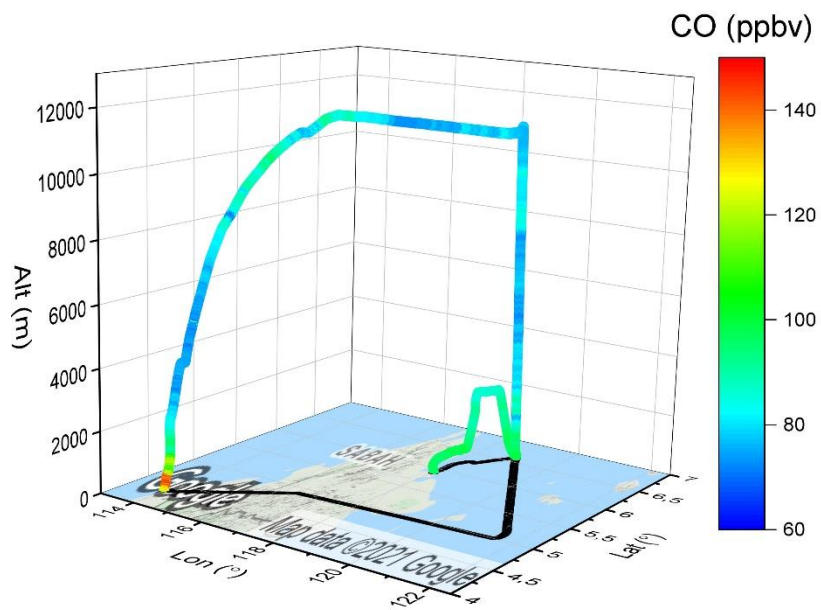
Figure S7: Flight trajectory colored by CO levels on flight-20111126_1. Map copyright: © GoogleMap.
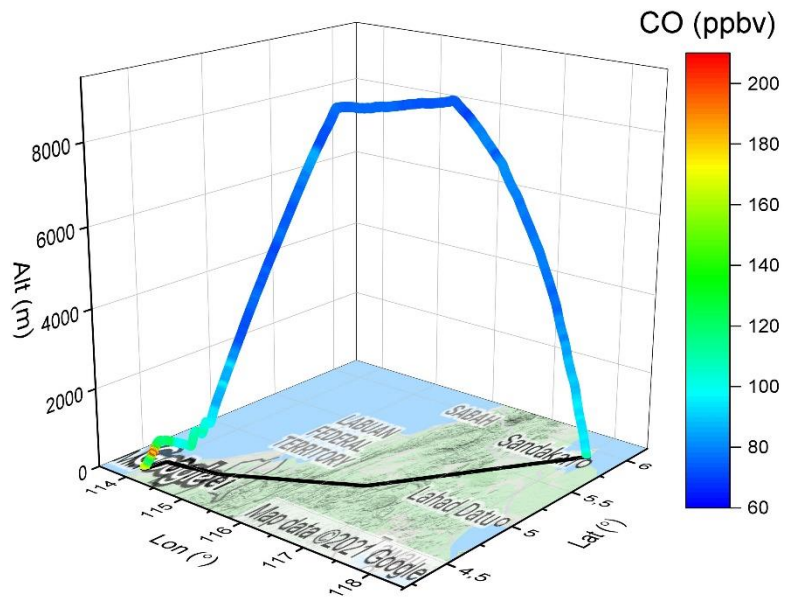
Figure S8: Flight trajectory colored by CO levels on flight-20111126_2. Map copyright: © GoogleMap.
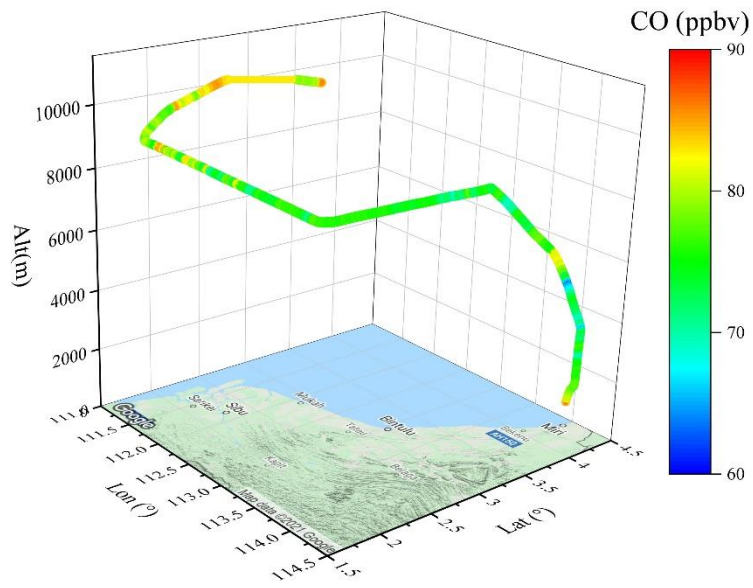
Figure S9: Flight trajectory colored by CO levels on flight-20111202_1. Map copyright: © GoogleMap.
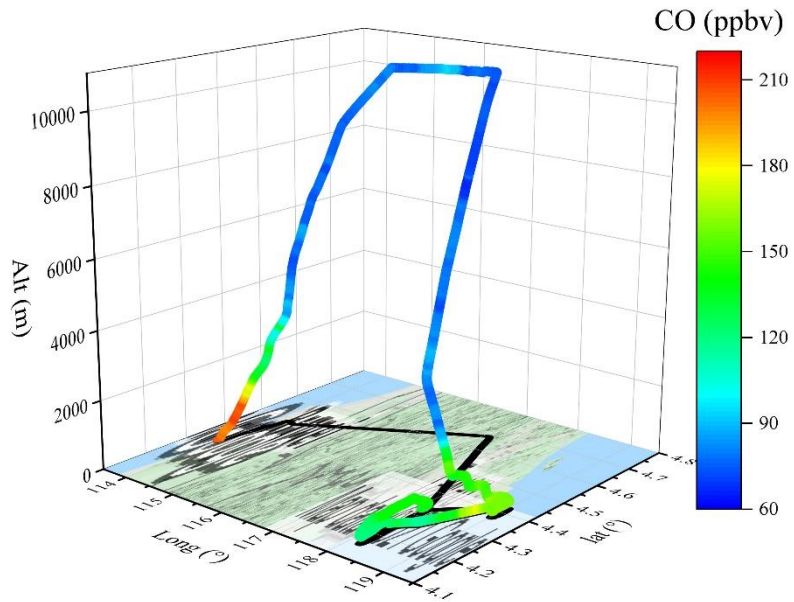
Figure S10: Flight trajectory colored by CO levels on flight-20111207_1. Map copyright: © GoogleMap.
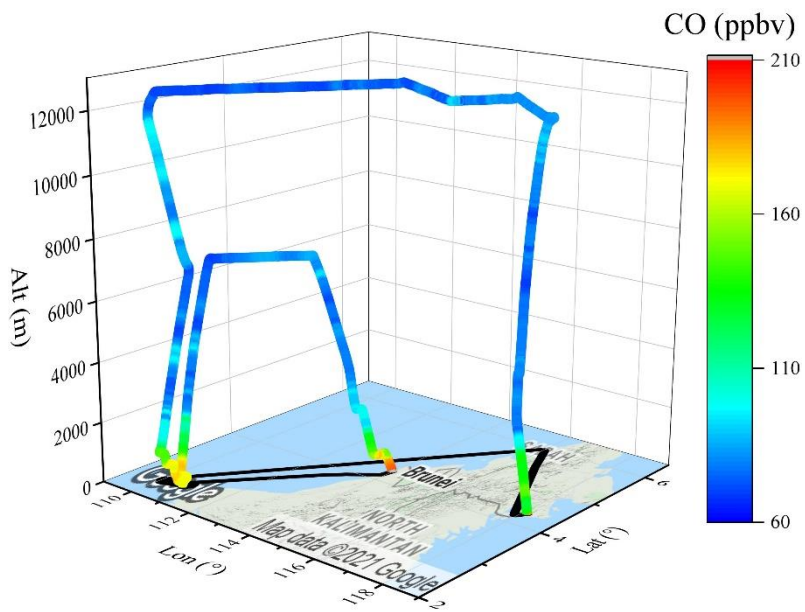
Figure S11: Flight trajectory colored by CO levels on flight-201111207_2. Map copyright: © GoogleMap.
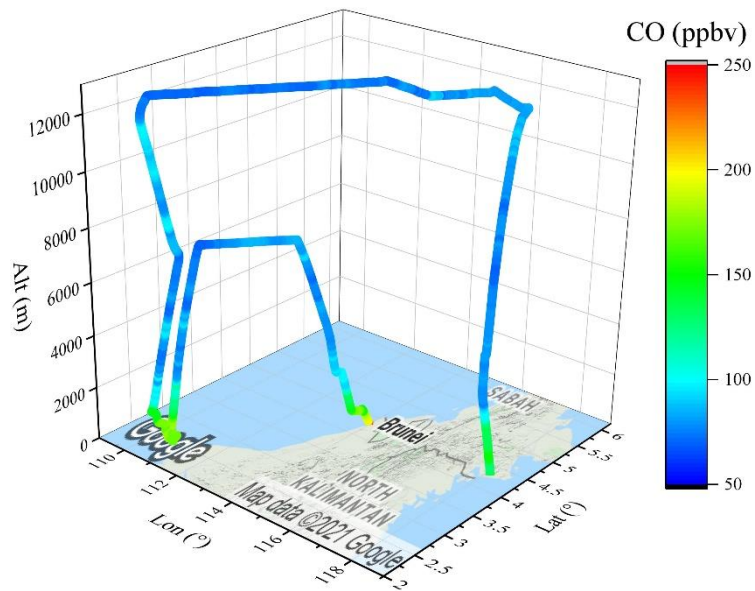
Figure S12: Flight trajectory colored by CO levels on flight-20111208_1. Map copyright: © GoogleMap.
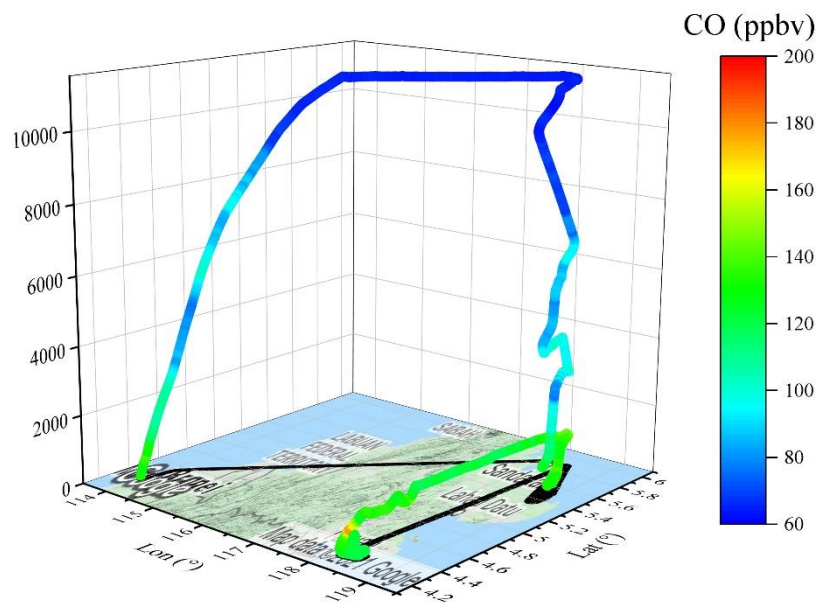
Figure S13: Flight trajectory colored by CO levels on flight-20111209_1. Map copyright: © GoogleMap.
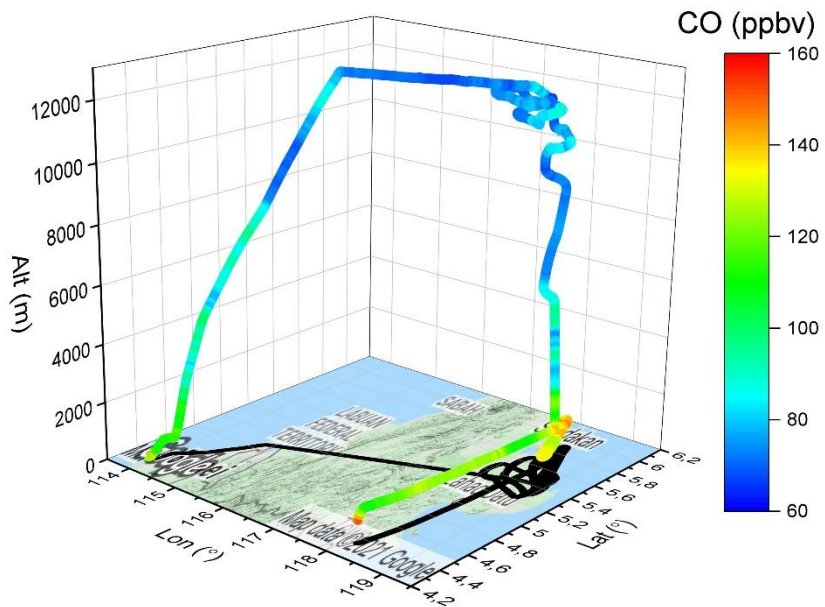
Figure S14: Flight trajectory colored by CO levels on flight-20111209_2. Map copyright: © GoogleMap.
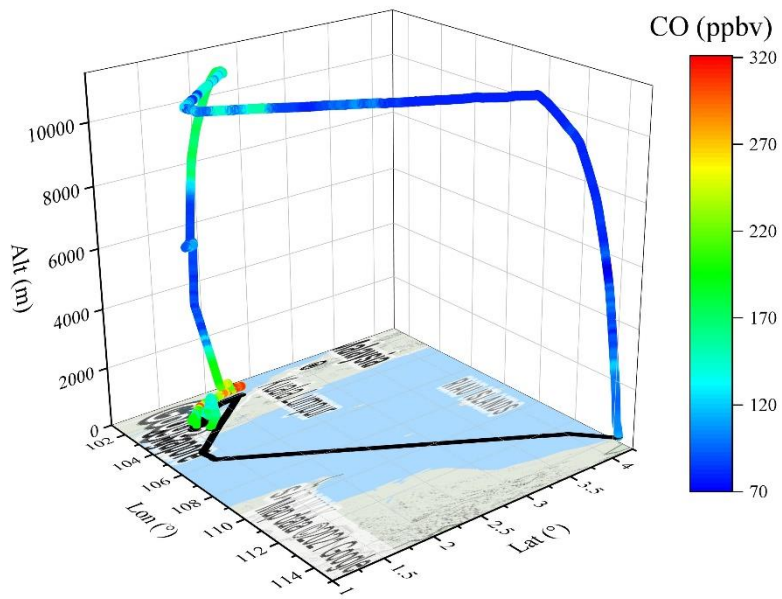
Figure S15: Flight trajectory colored by CO levels on flight-20111211_1. Map copyright: © GoogleMap.
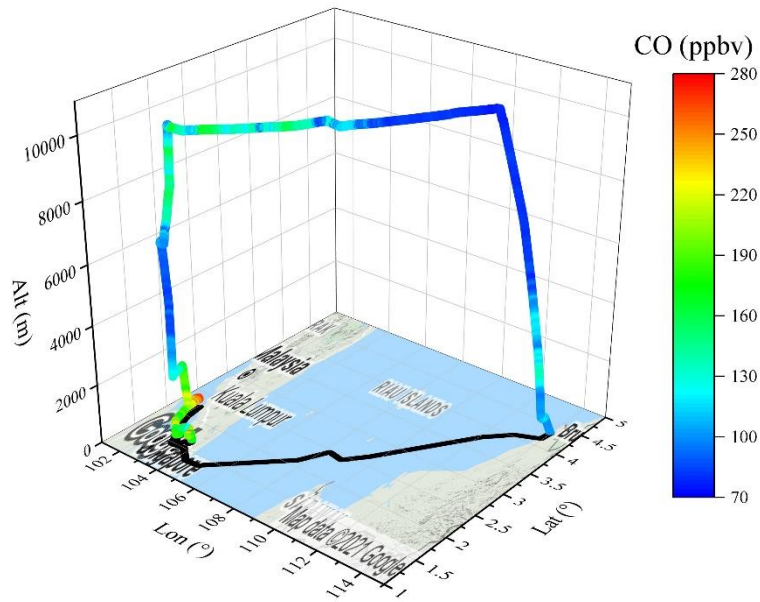
Figure S16: Flight trajectory colored by CO levels on flight-20111211_2. Map copyright: © GoogleMap.

2. Flights during the TC2 campaign
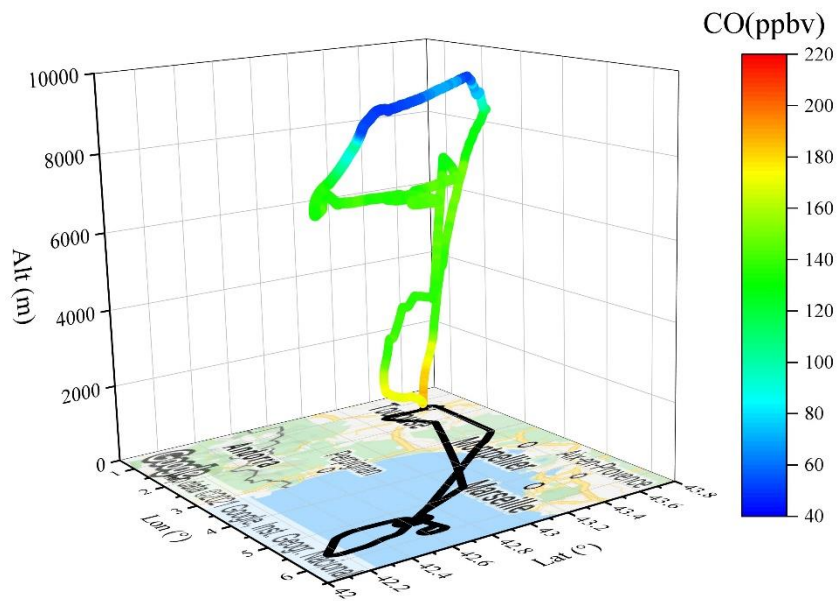
Figure S17: Flight trajectory colored by CO levels on flight-20130312_1. Map copyright: © GoogleMap.
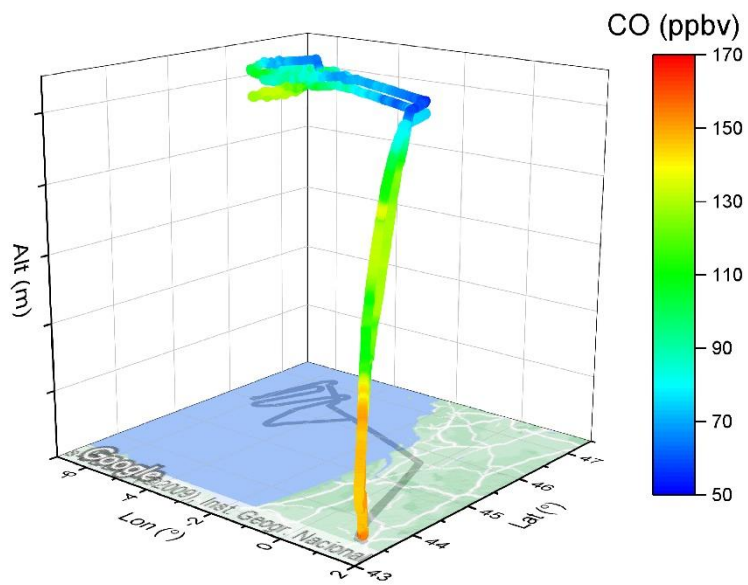
Figure S18: Flight trajectory colored by CO levels on flight-20130320_1. Map copyright: © GoogleMap.
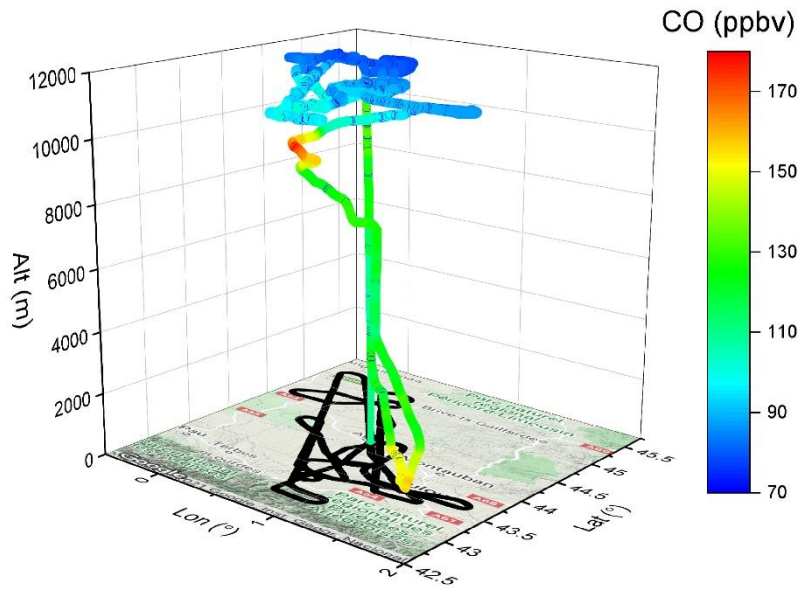
Figure S19: Flight trajectory colored by CO levels on flight-20130321_1. Map copyright: © GoogleMap.
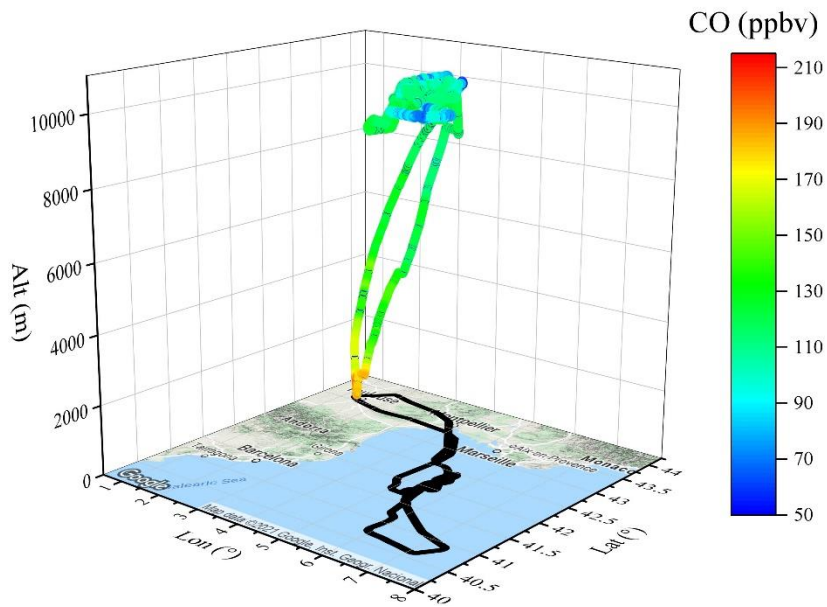
Figure S20: Flight trajectory colored by CO levels on flight-20130326_1. Map copyright: © GoogleMap.
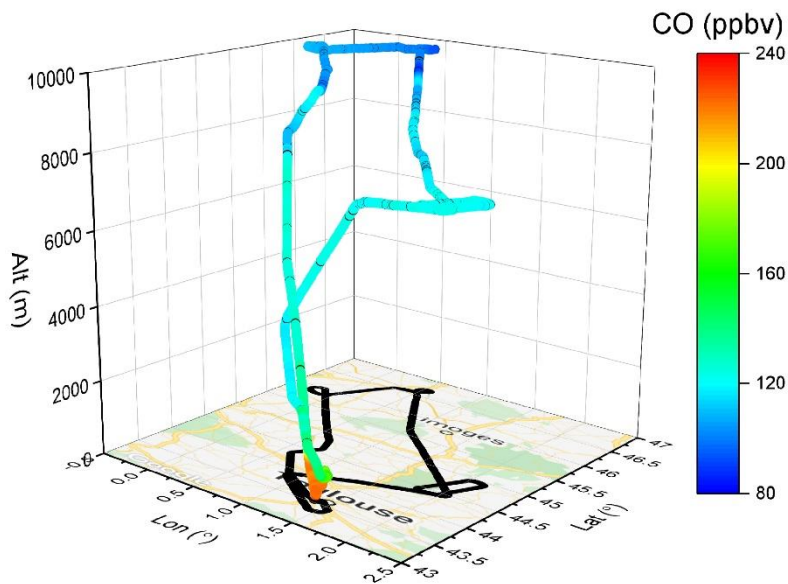
Figure S21: Flight trajectory colored by CO levels on flight-20130328_1. Map copyright: © GoogleMap.
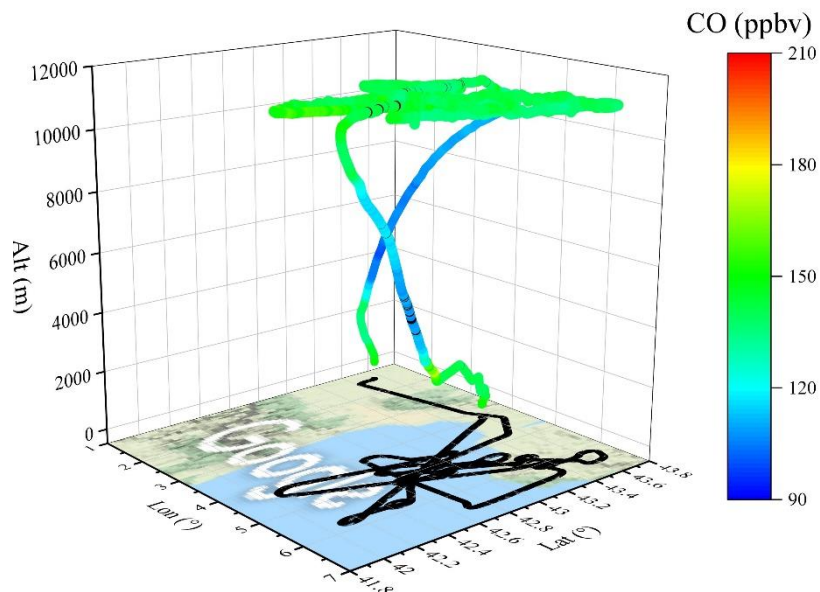
Figure S22: Flight trajectory colored by CO levels on flight-20130410_1. Map copyright: © GoogleMap.
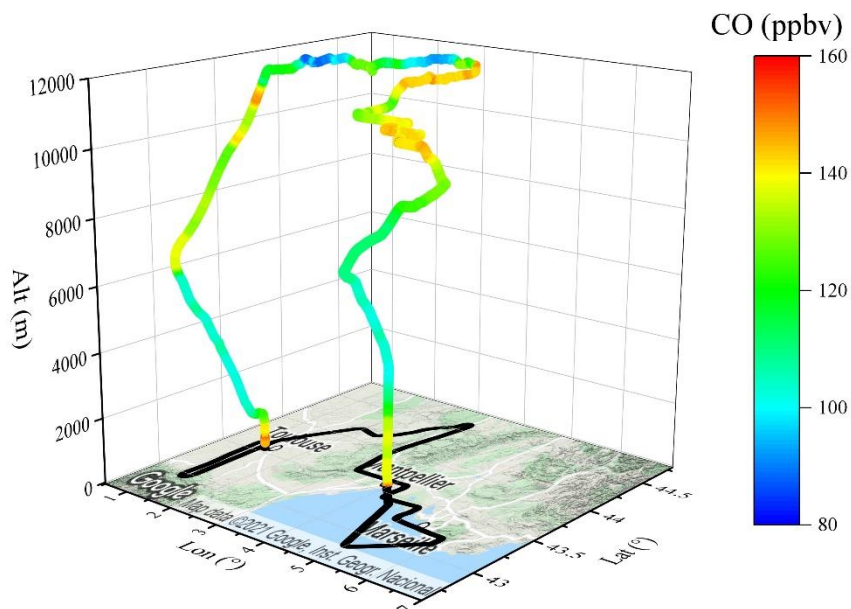
Figure S23: Flight trajectory colored by CO levels on flight-20130410_2. Map copyright: © GoogleMap.
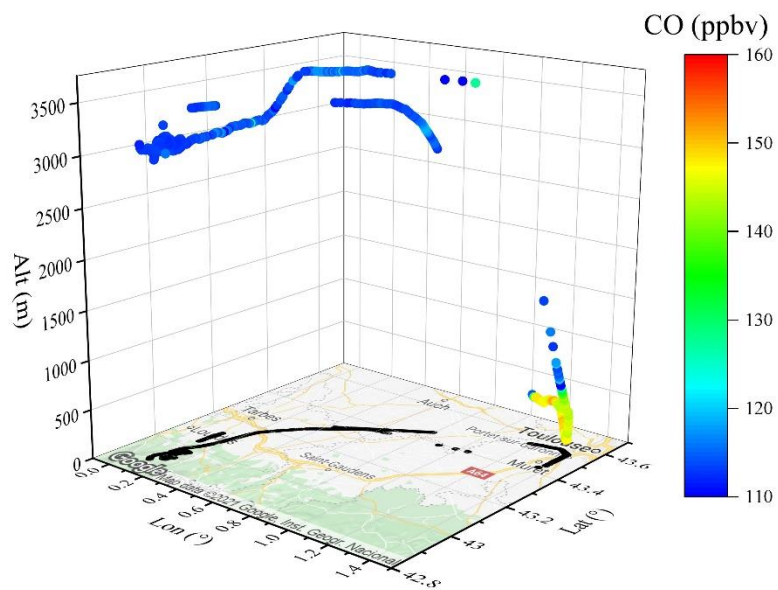
Figure S24: Flight trajectory colored by CO levels on flight-20130411_1. Map copyright: © GoogleMap.
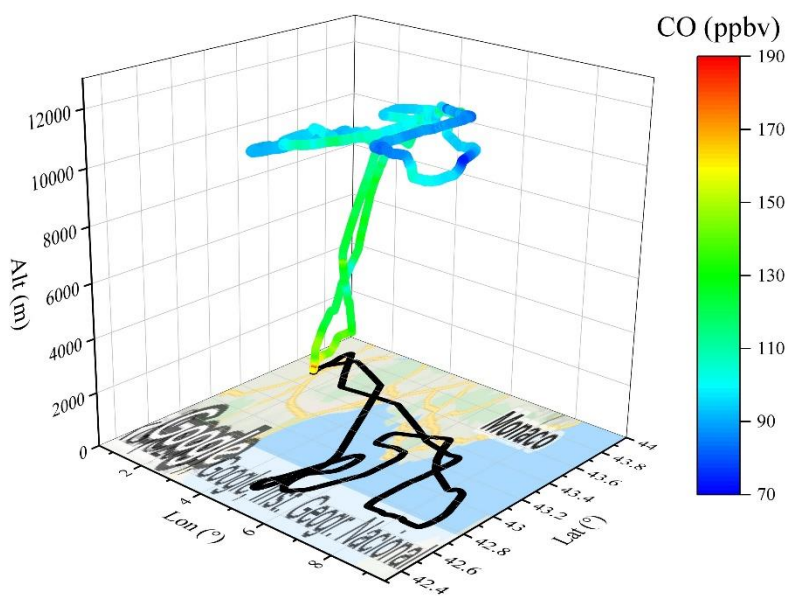
Figure S25: Flight trajectory colored by CO levels on flight-20130416_1. Map copyright: © GoogleMap.
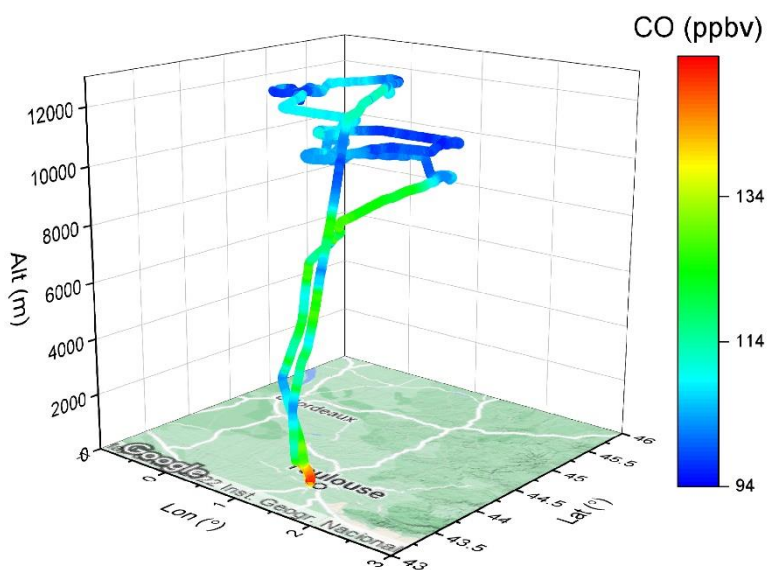
Figure S26: Flight trajectory colored by CO levels on flight-20130417_1. Map copyright: © GoogleMap.
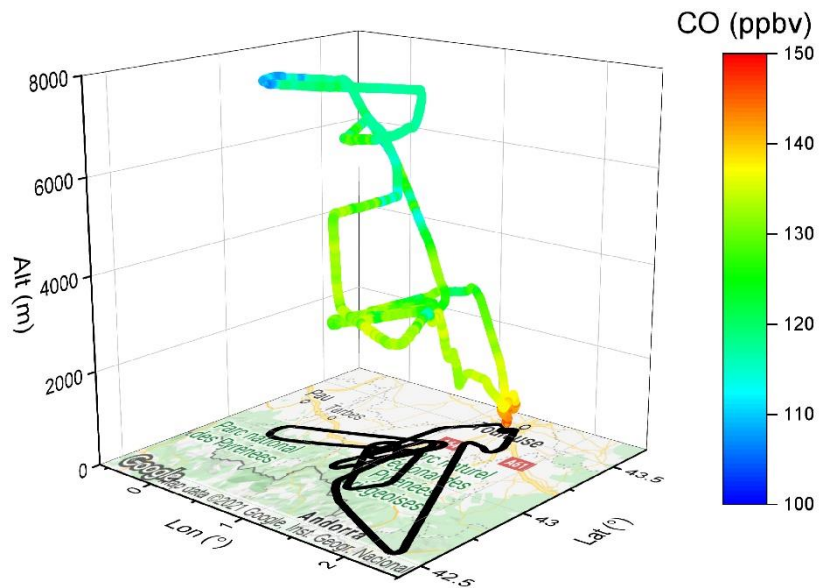
Figure S27: Flight trajectory colored by CO levels on flight-20130531_1. Map copyright: © GoogleMap.

3. Flights during the ChemCalInt campaign
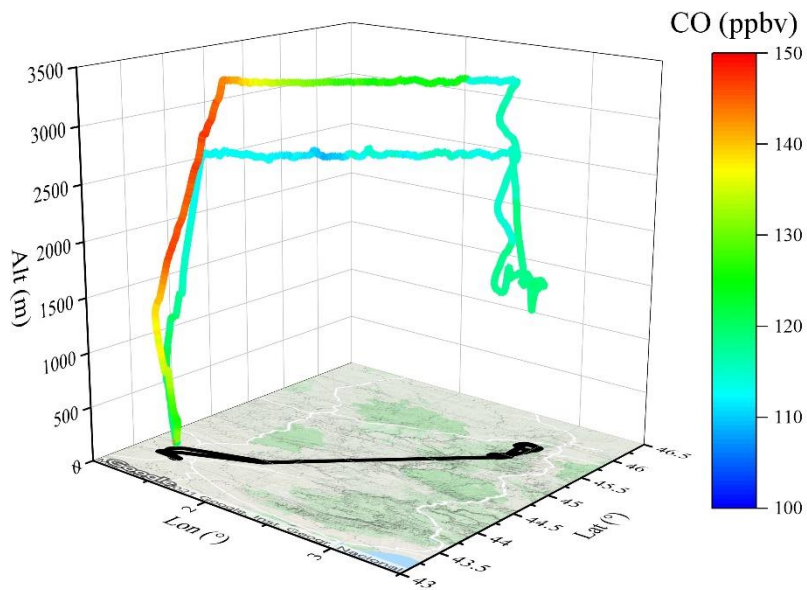
Figure S28: Flight trajectory colored by CO levels on flight-20140520_1. Map copyright: © GoogleMap.
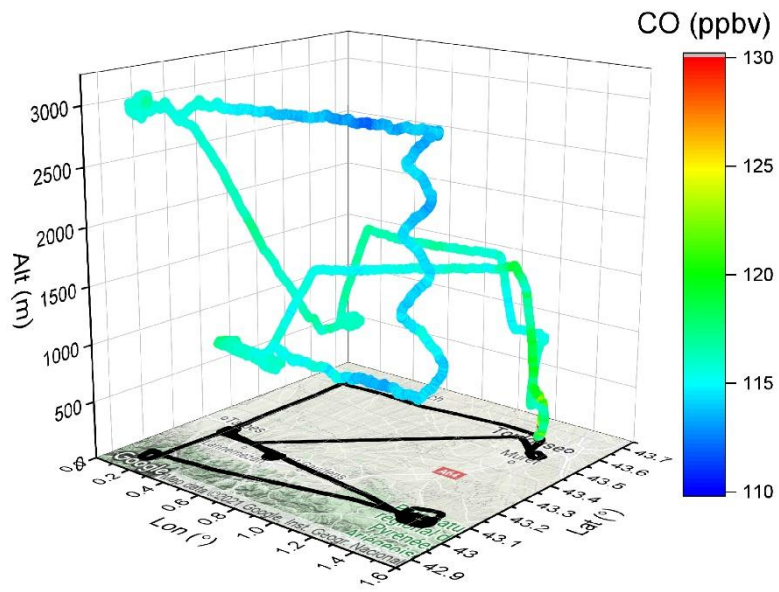
Figure S29: Flight trajectory colored by CO levels on flight-20140522_1. Map copyright: © GoogleMap.
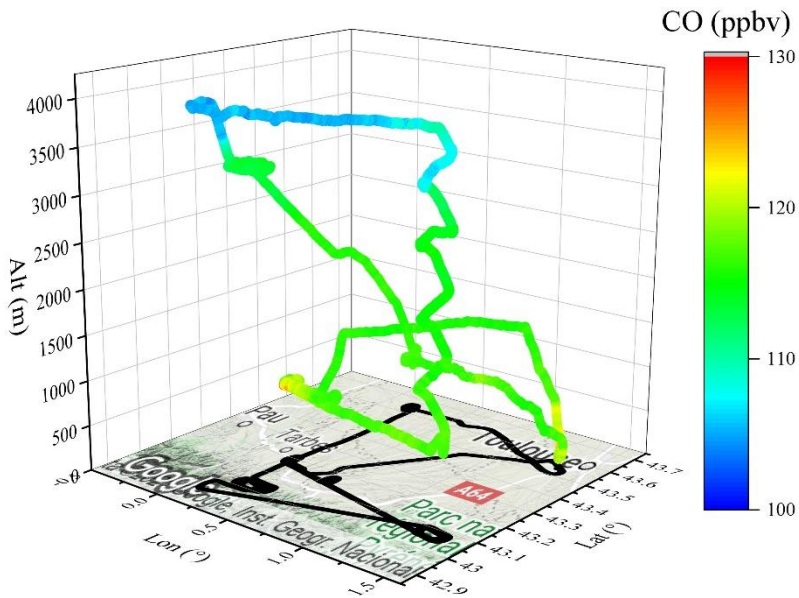
Figure S30: Flight trajectory colored by CO levels on flight-20140527_1. Map copyright: © GoogleMap.
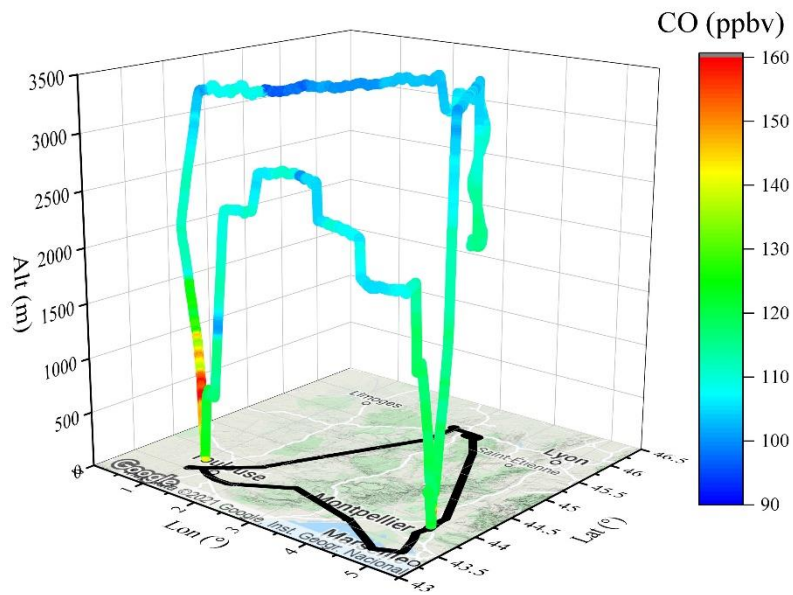
Figure S31: Flight trajectory colored by CO levels on flight-20140528_1. Map copyright: © GoogleMap.

4. Flights during the ChArMEx – GLAM campaign
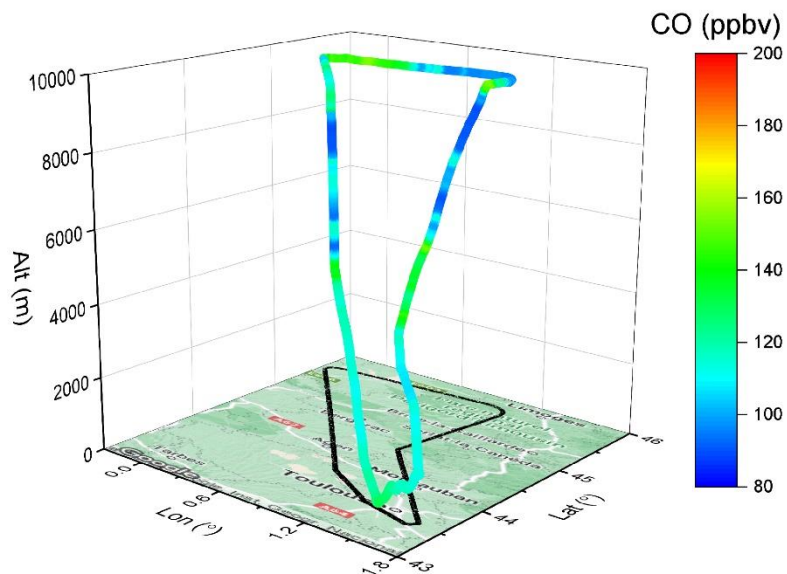
Figure S32: Flight trajectory colored by CO levels on flight-20140804_1. Map copyright: © GoogleMap.
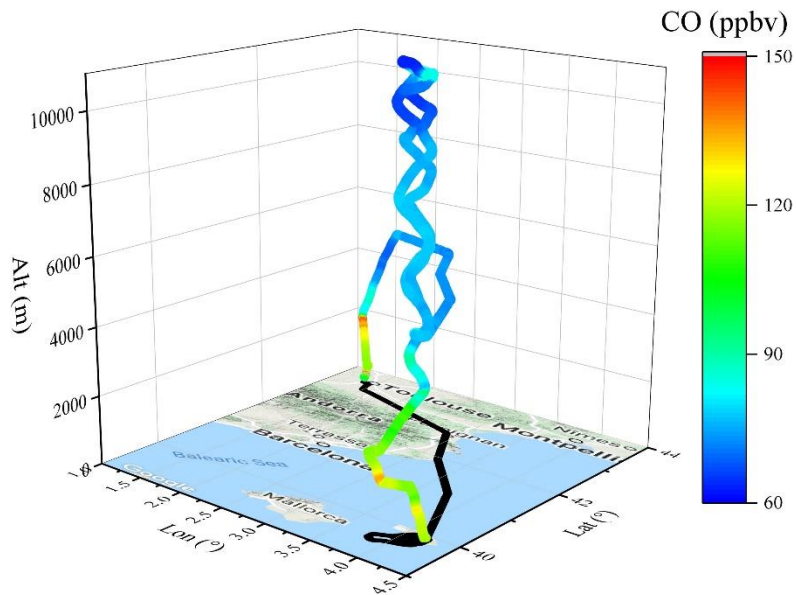
Figure S33: Flight trajectory colored by CO levels on flight-20140806_1. Map copyright: © GoogleMap.
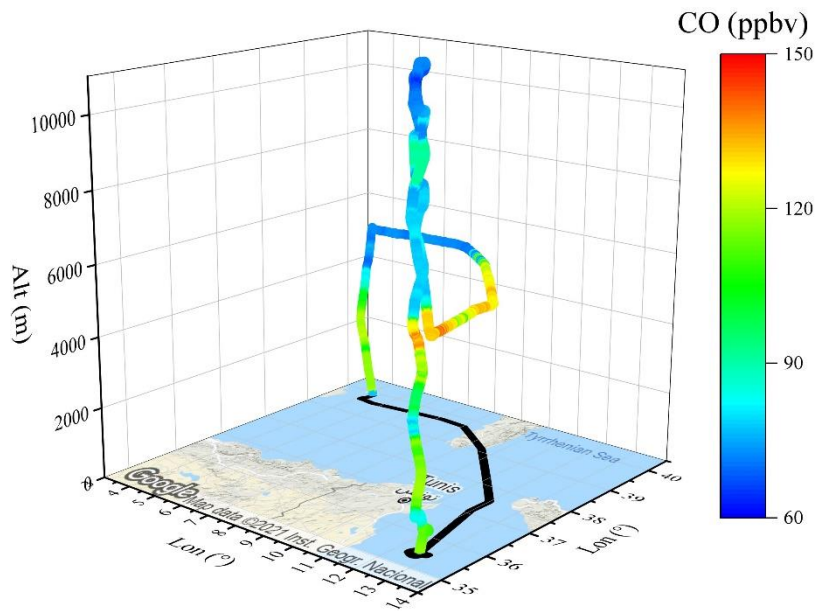
Figure S34: Flight trajectory colored by CO levels on flight-20140806_2. Map copyright: © GoogleMap.
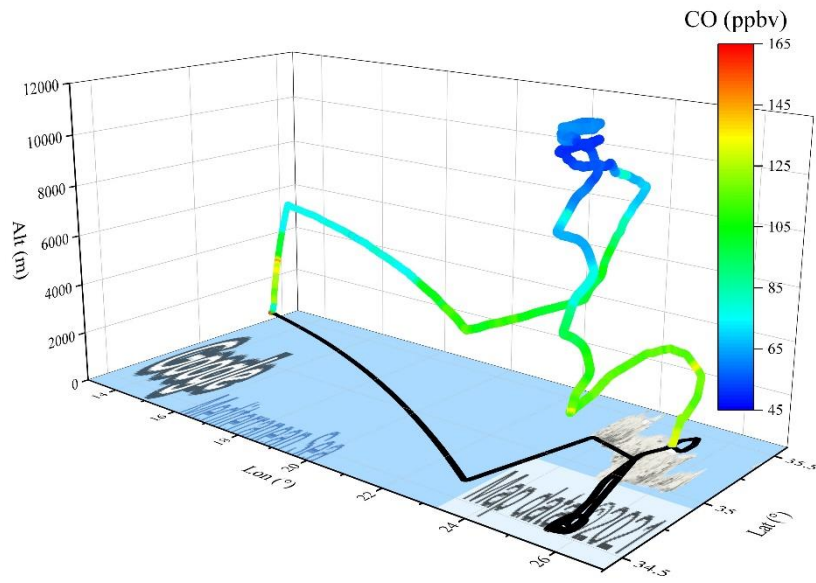
Figure S35: Flight trajectory colored by CO levels on flight-20140807_1. Map copyright: © GoogleMap.
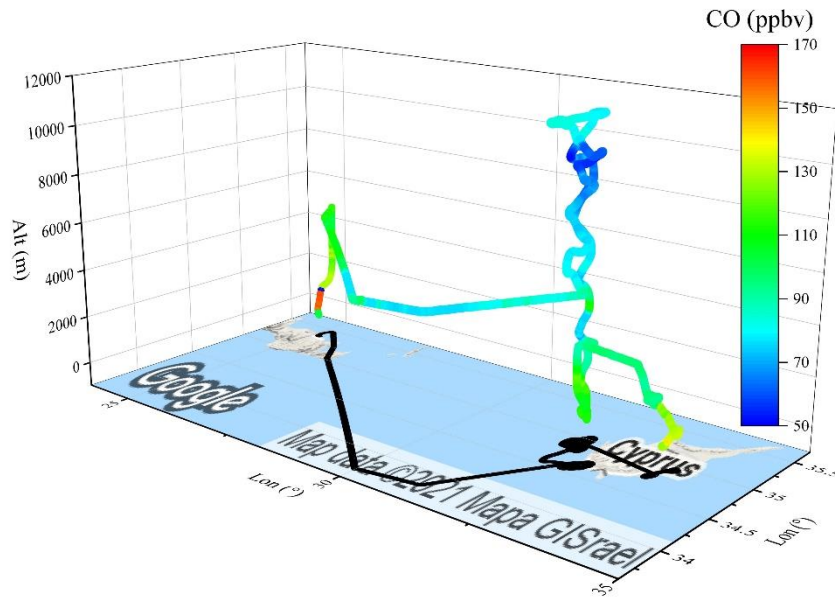
Figure S36: Flight trajectory colored by CO levels on flight-20140807_2. Map copyright: © GoogleMap.
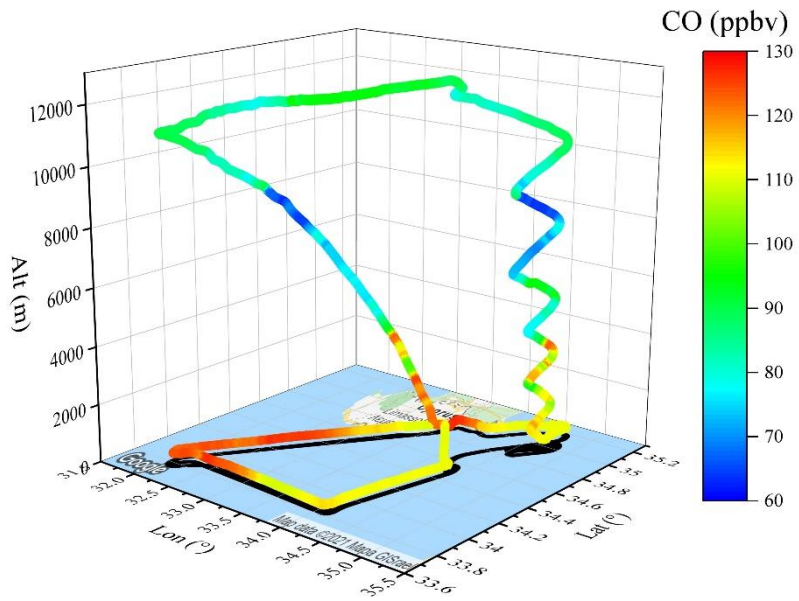
Figure S37: Flight trajectory colored by CO levels on flight-20140808_1. Map copyright: © GoogleMap.
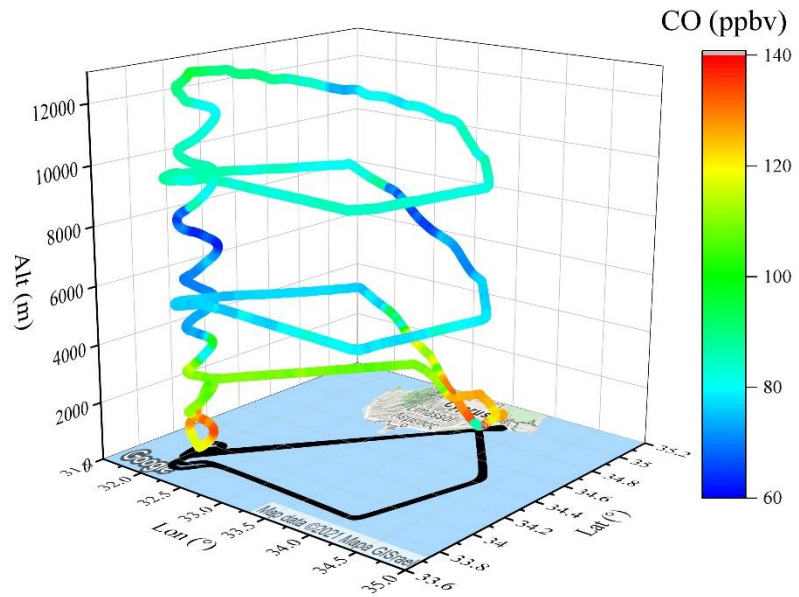
Figure S38: Flight trajectory colored by CO levels on flight-20140808_2. Map copyright: © GoogleMap.
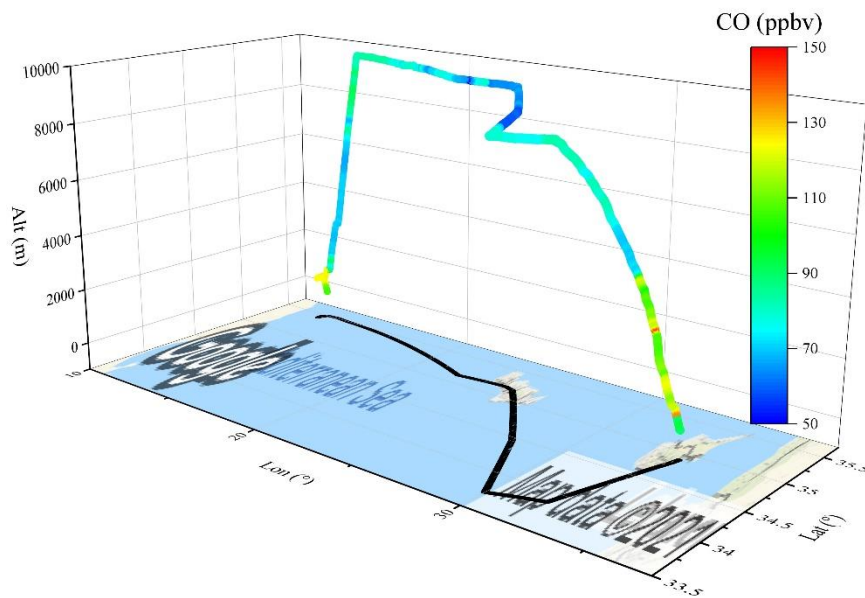
Figure S39: Flight trajectory colored by CO levels on flight-20140810_1. Map copyright: © GoogleMap.
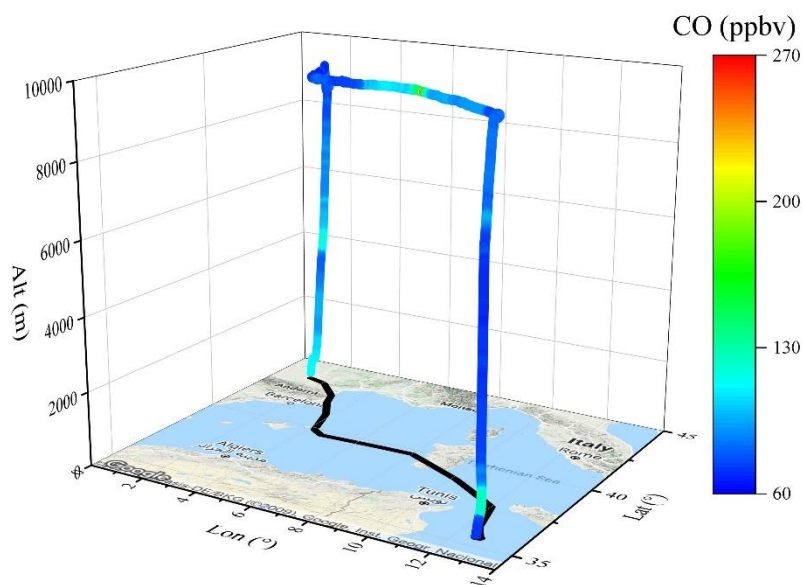
Figure S40: Flight trajectory colored by CO levels on flight-20140810_2. Map copyright: © GoogleMap.

5. Flights during the Test-sur-ATR42 campaign
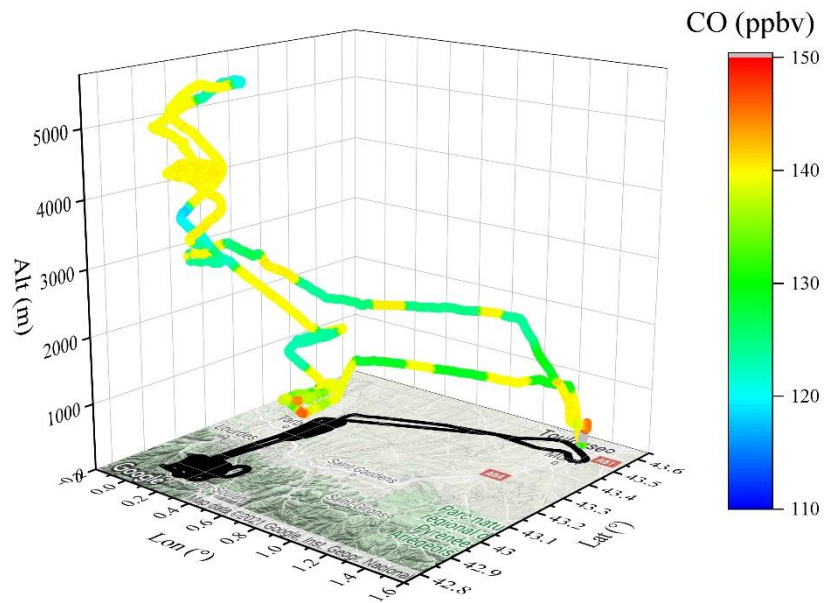
Figure S41: Flight trajectory colored by CO levels on flight-20160205_1. Map copyright: © GoogleMap.

6. Flights during the DACCIWA campaign

The five transfer flights are only shown in Figure 21 in the main text.
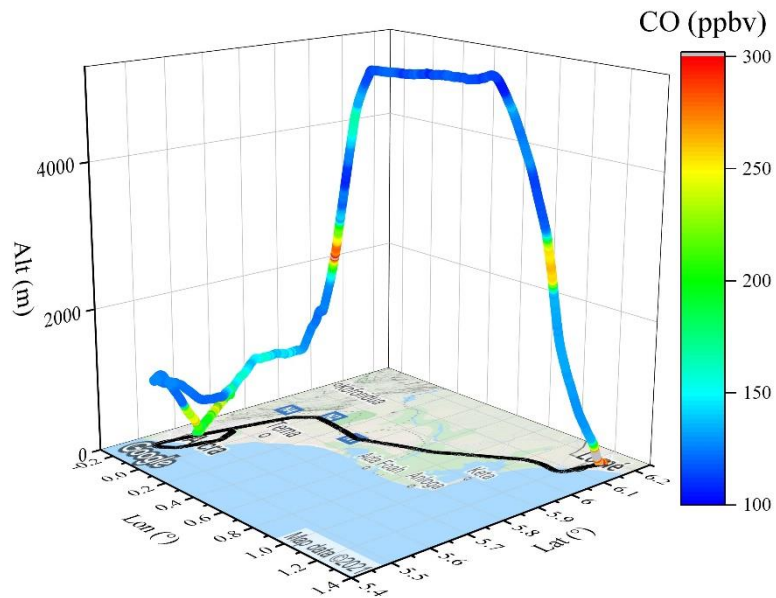
Figure S42: Flight trajectory colored by CO levels on flight-20160628_1. Map copyright: © GoogleMap.
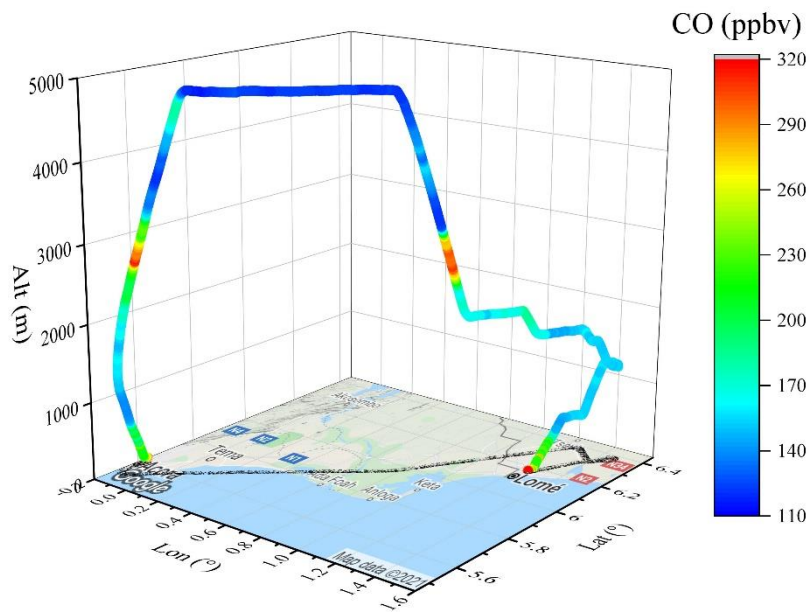
Figure S43: Flight trajectory colored by CO levels on flight-20160628_2. Map copyright: © GoogleMap.
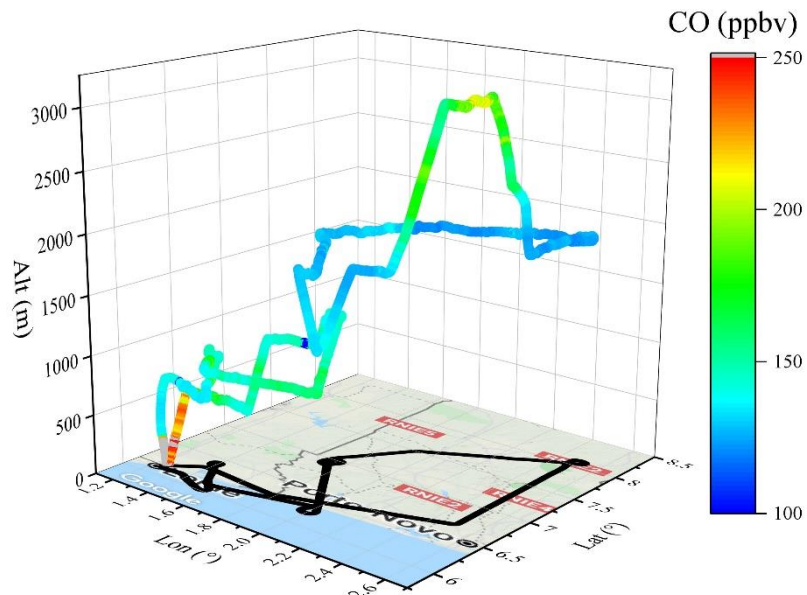
Figure S44: Flight trajectory colored by CO levels on flight-20160629_1. Map copyright: © GoogleMap.
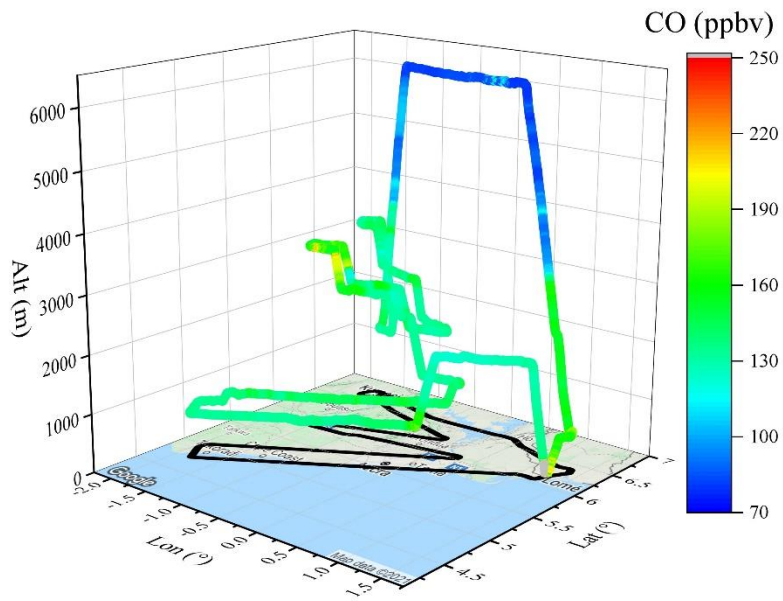
Figure S45: Flight trajectory colored by CO levels on flight-20160630_1. Map copyright: © GoogleMap.
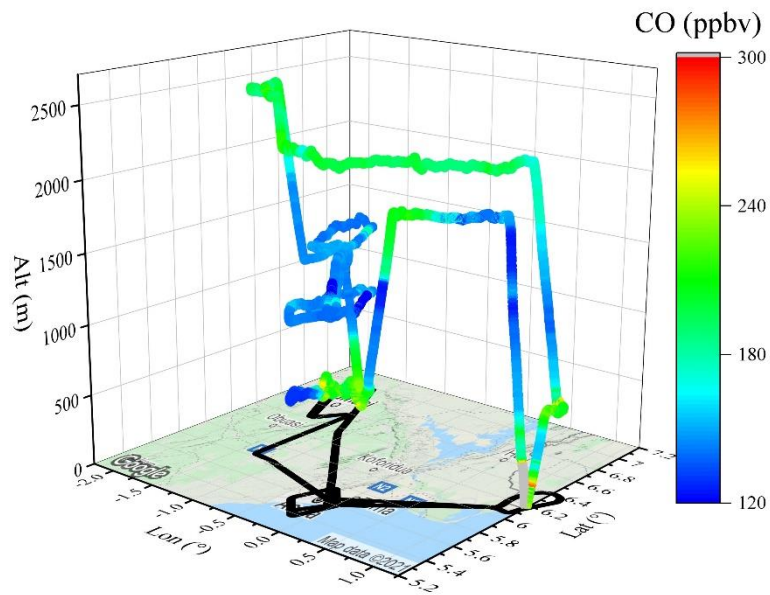
Figure S46: Flight trajectory colored by CO levels on flight-20160701_1. Map copyright: © GoogleMap.
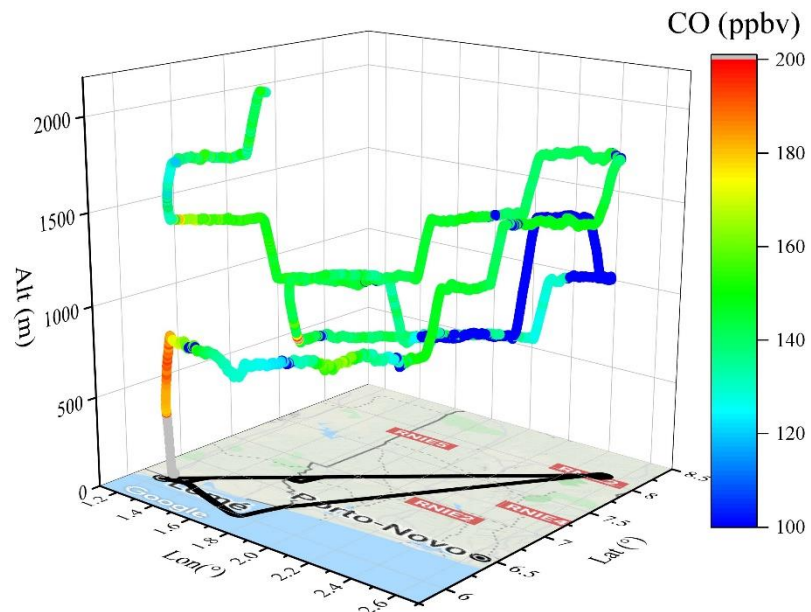
Figure S47: Flight trajectory colored by CO levels on flight-20160705_1. Map copyright: © GoogleMap.
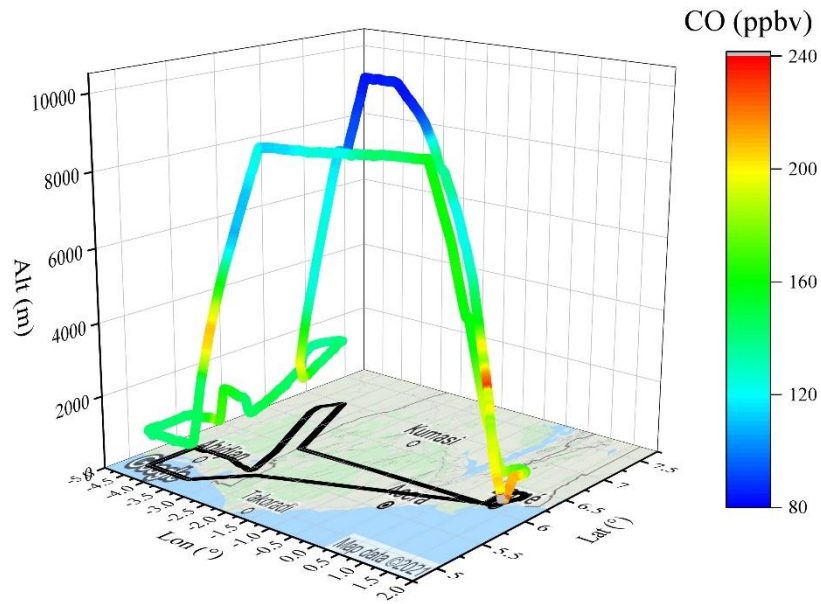
Figure S48: Flight trajectory colored by CO levels on flight-20160706_1. Map copyright: © GoogleMap.
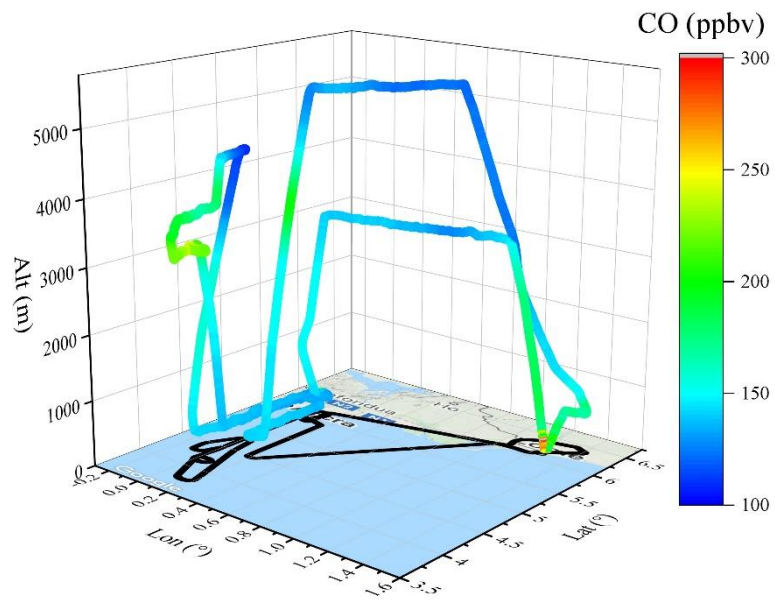
Figure S49: Flight trajectory colored by CO levels on flight-20160707_1. Map copyright: © GoogleMap.
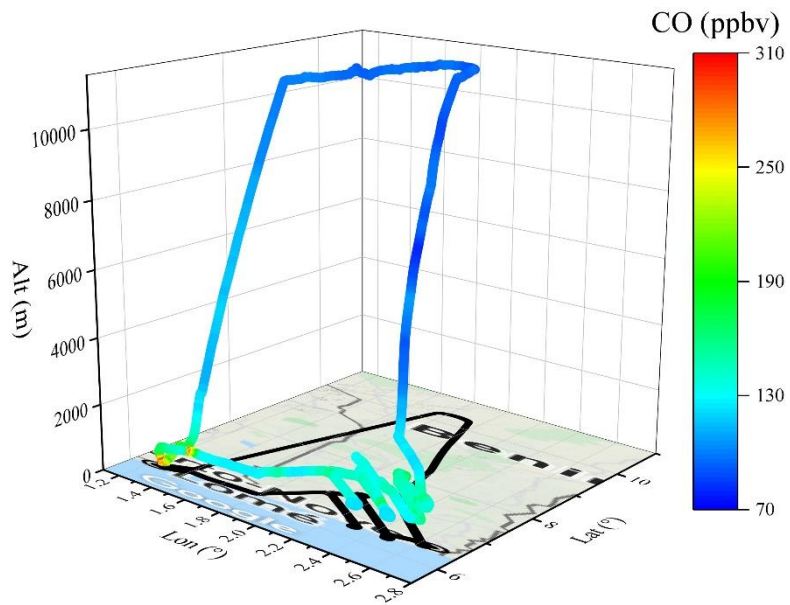
Figure S50: Flight trajectory colored by CO levels on flight-20160708_1. Map copyright: © GoogleMap.
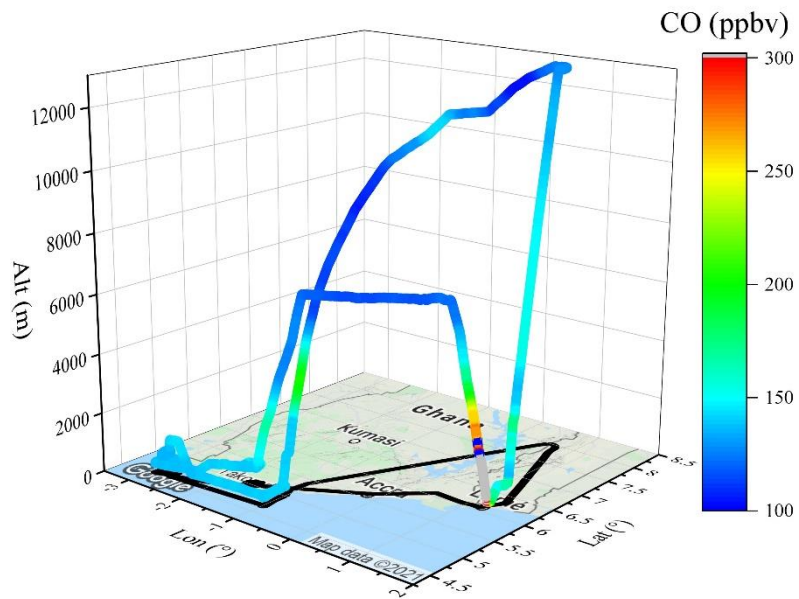
Figure S51: Flight trajectory colored by CO levels on flight-20160710_1. Map copyright: © GoogleMap.
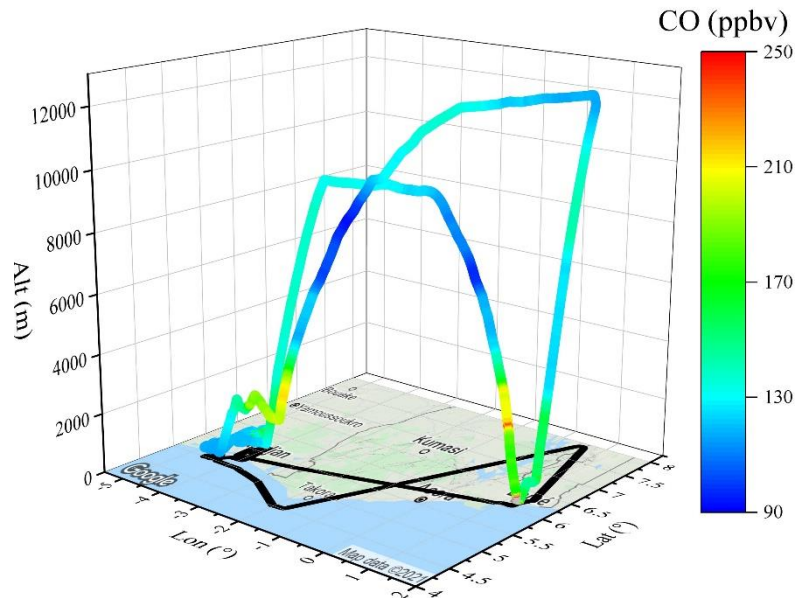
Figure S52: Flight trajectory colored by CO levels on flight-20160711_1. Map copyright: © GoogleMap.
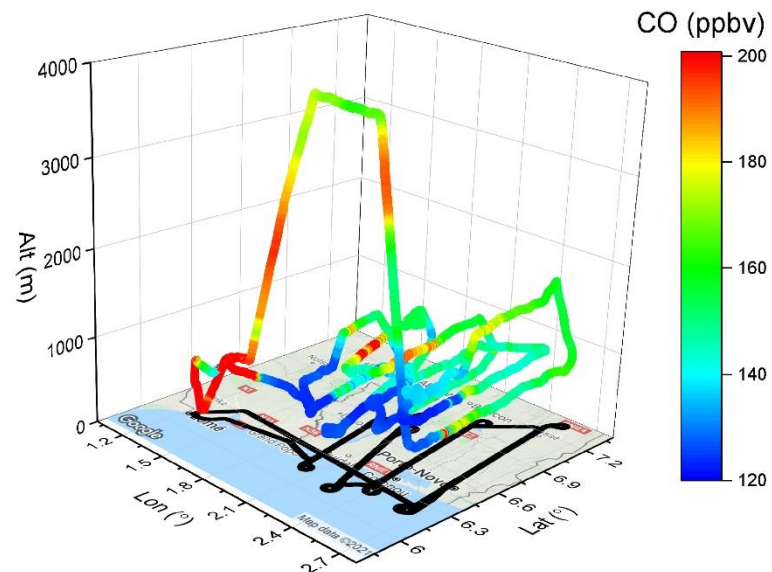
Figure S53: Flight trajectory colored by CO levels on flight-20160712_1. Map copyright: © GoogleMap.
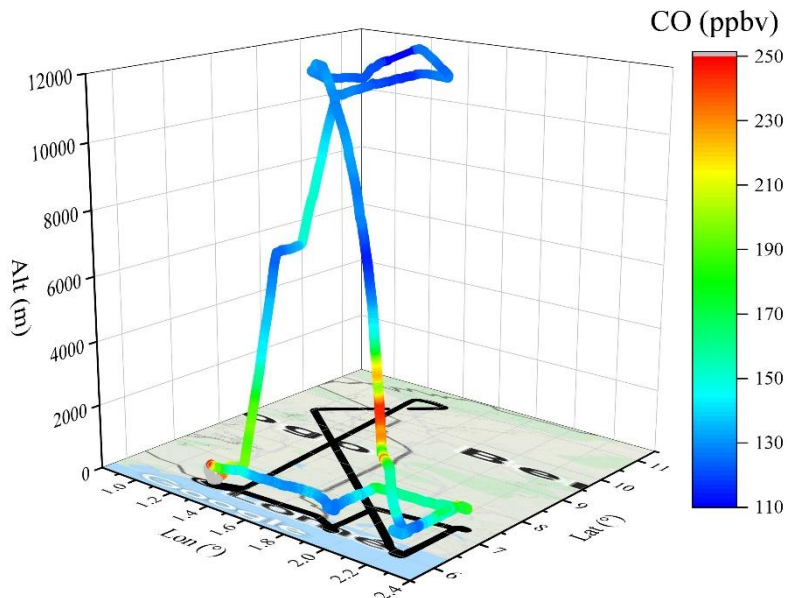
Figure S54: Flight trajectory colored by CO levels on flight-20160713_1. Map copyright: © GoogleMap.
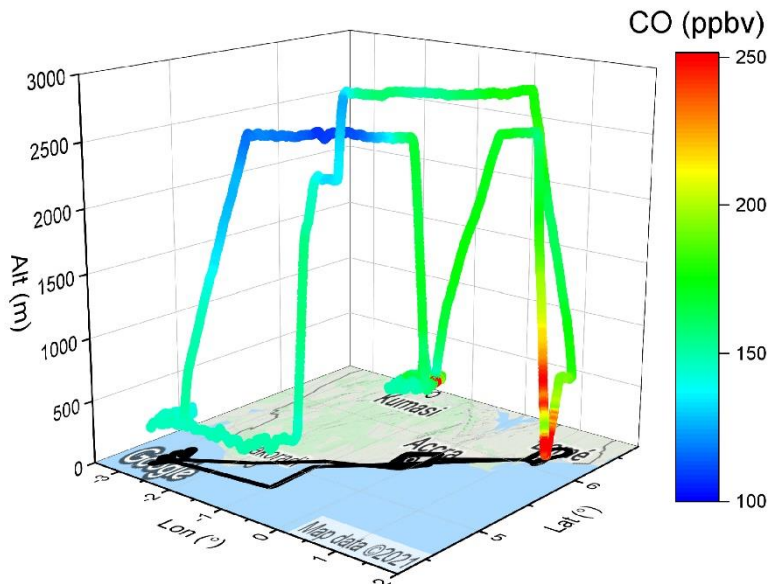
Figure S55: Flight trajectory colored by CO levels on flight-20160714_1. Map copyright: © GoogleMap.

7. Flights during the MAGIC-2019 campaign
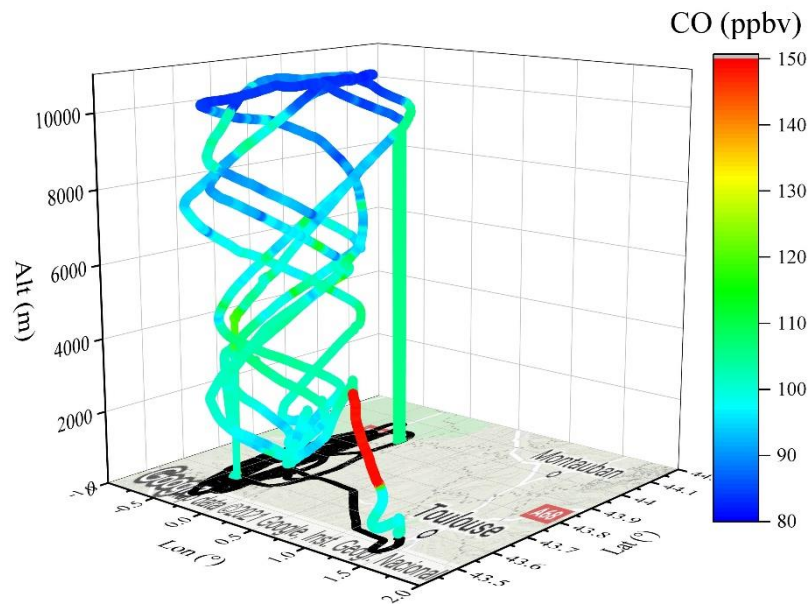
Figure S56: Flight trajectory colored by CO levels on flight-20190613_1. Map copyright: © GoogleMap.
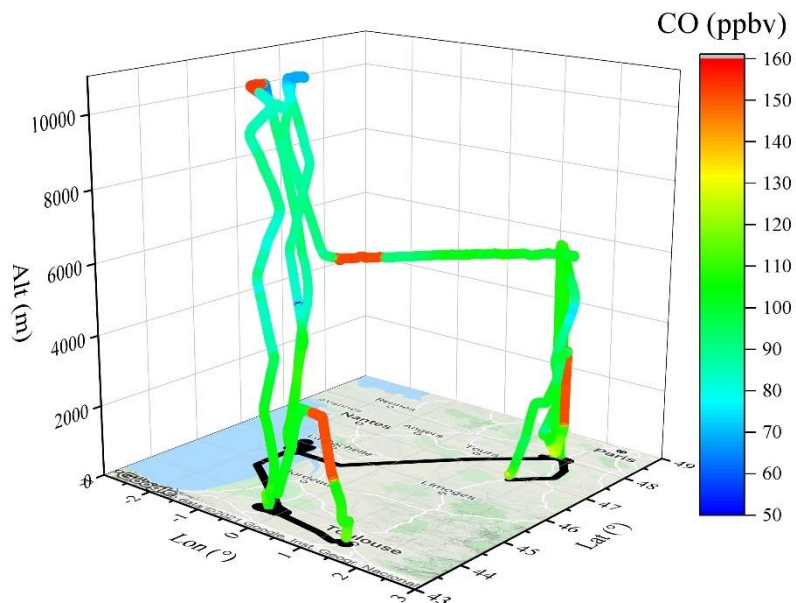
Figure S57: Flight trajectory colored by CO levels on flight-20190618_1. Map copyright: © GoogleMap.
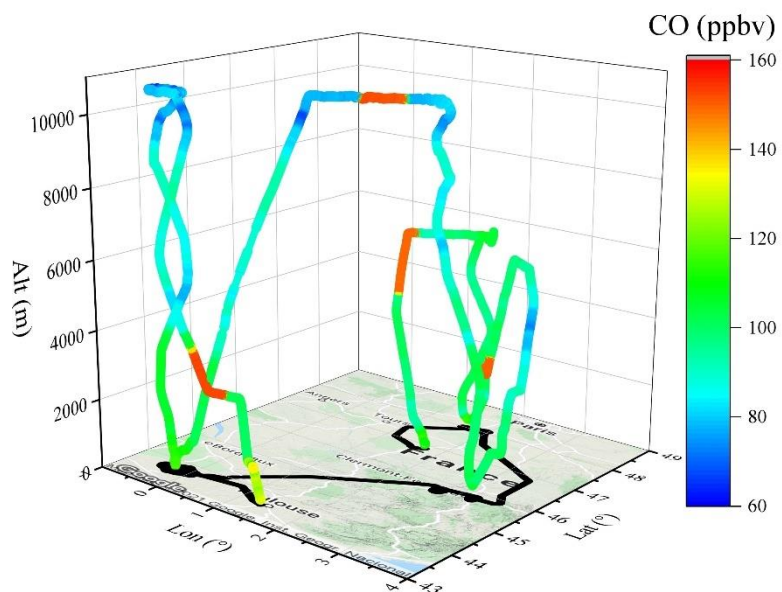
Figure S58: Flight trajectory colored by CO levels on flight-20190618_2. Map copyright: © GoogleMap.

8. Flights during the MAGIC-2021 campaign
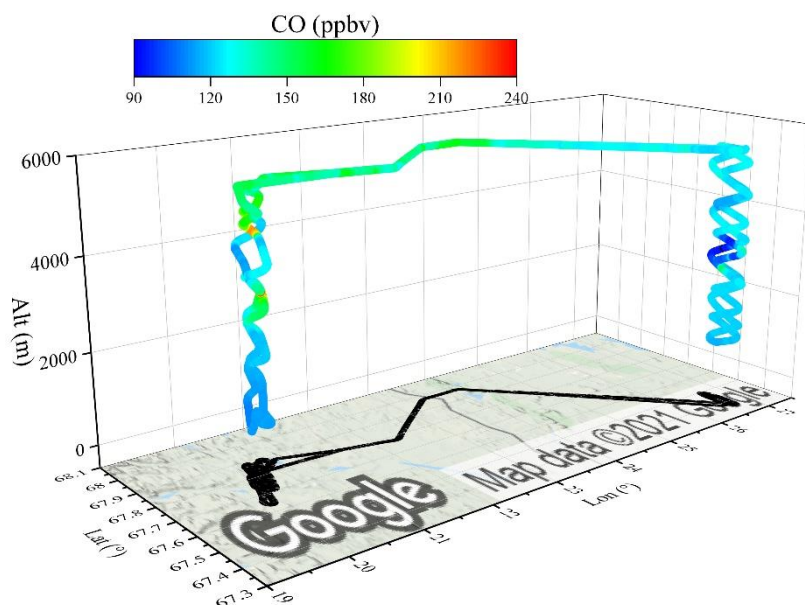
Figure S59: Flight trajectory colored by CO levels on flight-20210817_1. Map copyright: © GoogleMap.
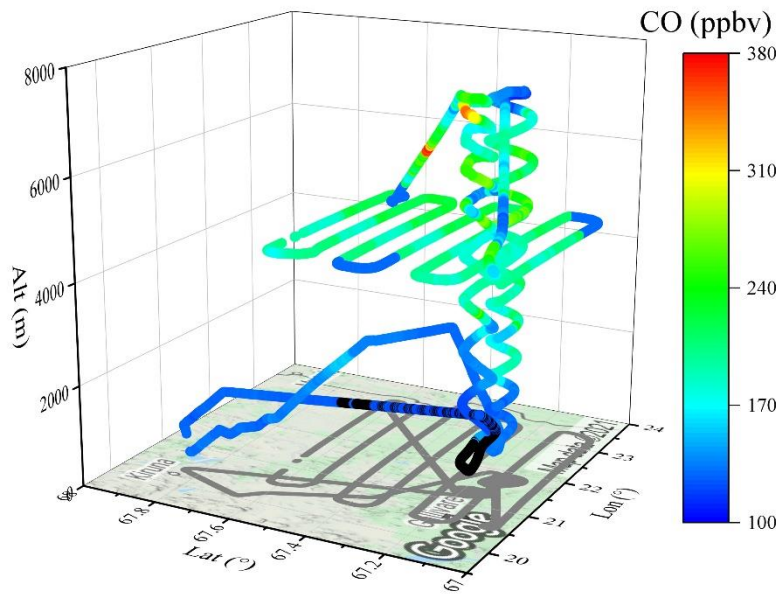
Figure S60: Flight trajectory colored by CO levels on flight-20210823_1. Map copyright: © GoogleMap.
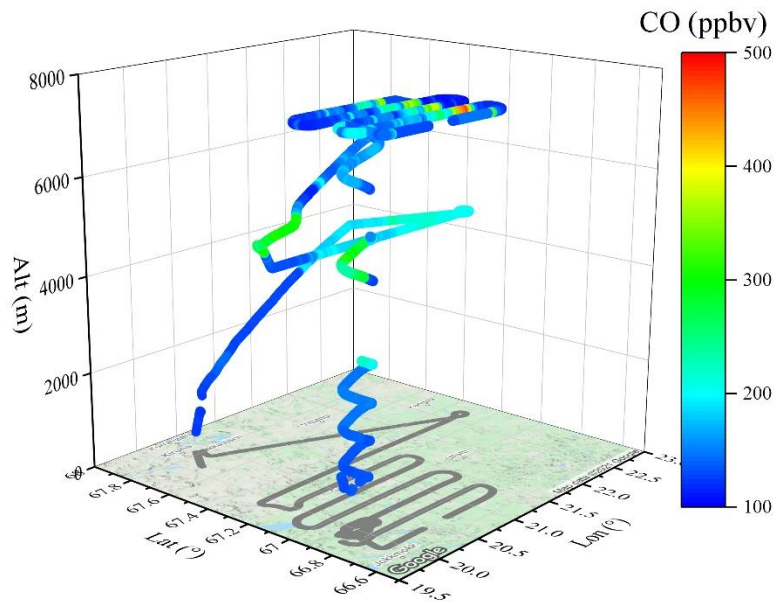
Figure S61: Flight trajectory colored by CO levels on flight-20210823_2. Map copyright: © GoogleMap.
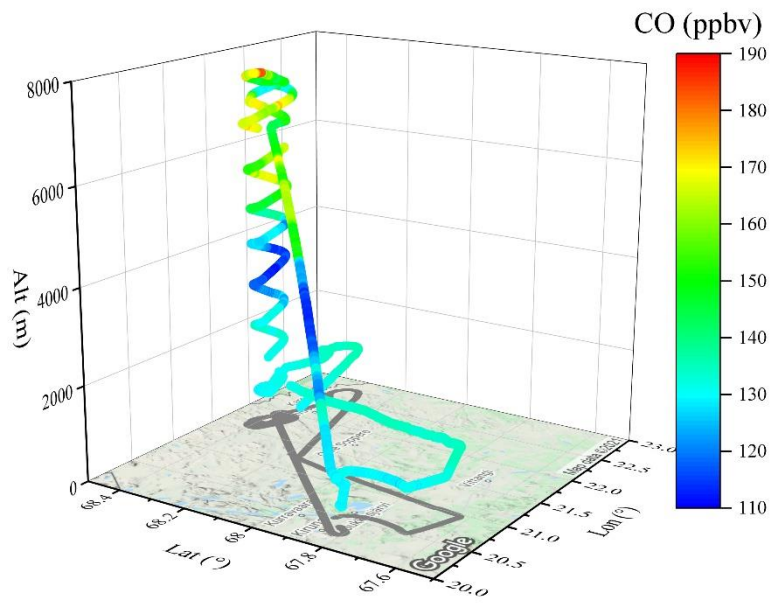
Figure S62: Flight trajectory colored by CO levels on flight-20210824_1. Map copyright: © GoogleMap.
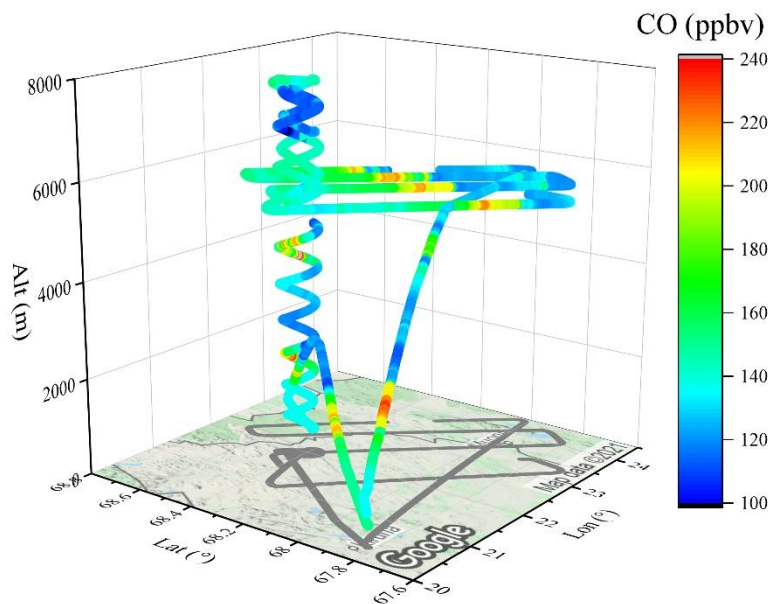
Figure S63: Flight trajectory colored by CO levels on flight-20210826_1. Map copyright: © GoogleMap.
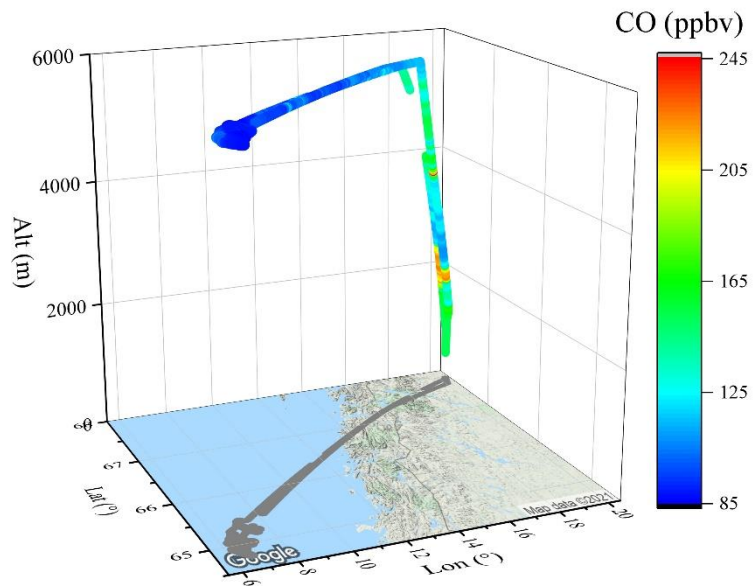
Figure S64: Flight trajectory colored by CO levels on flight-20210826_2. Map copyright: © GoogleMap.
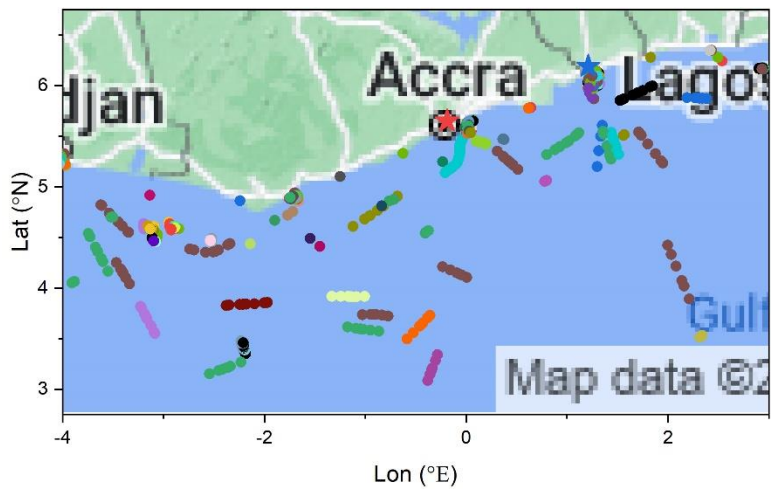
Figure S65: Ship position on 7 July 2016 (Date source: Marine Traffic). The red and the blue stars represent Accra and Lomé ports, respectively. © GoogleMap.