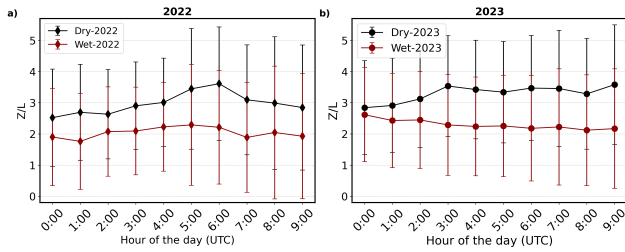
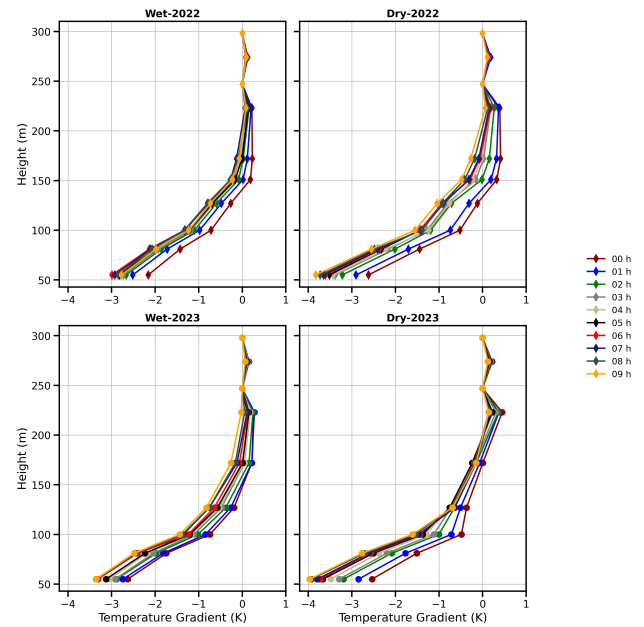


# Supplementary material for “Estimation of Nocturnal Boundary Layer Height in the Central Amazon, Supported by Gas Concentration Profiles”

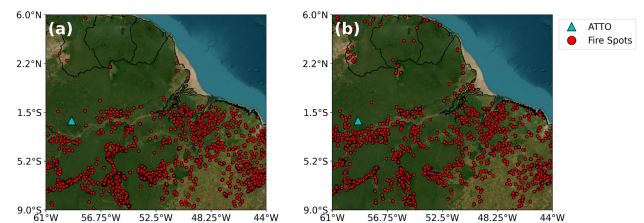
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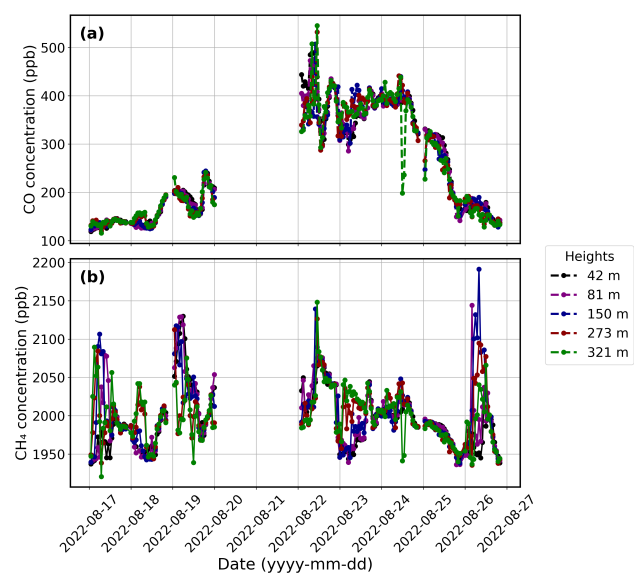
**Figure S1.** Hourly mean evolution of the atmospheric stability parameter ( $z/L$ ) for the Wet season (in red) and the Dry season (in black) during a) 2022 and b) 2023.



**Figure S2.** Hourly mean profiles of the potential temperature gradient for a) and c) the Wet season and b) and d) the Dry season, during a) and b) 2022 and c) and d) 2023. The different colors represent the different hours during the night from 00 UTC to 09 UTC (local time: 20:00 to 05:00).



**Figure S3.** Fire hotspots detected with the satellites: GOES-16, AQUA, NPP-375, NOAA-20, TERRA, NPP375D, METOP-C, and METOP-B, for the period of a) 16 UTC on 17/08/2022 to 09 UTC on 18/08/2022 and b) 16 UTC on 24/08/2022 to 09 UTC on 25/08/2022.



**Figure S4.** Concentration profiles of a) CO and b) CH<sub>4</sub> for the period from 17 to 25 August 2022.