



CO₂ atmospheric concentration variability over rice paddies (Ebre River Delta ClimaDat station) in two different surveys

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In 2012-2013, as part of the ClimaDat Network project (www.climadat.es), we observed a great spatial variability of atmospheric greenhouse gases concentrations related to rice paddy lands, over a 72 km transect within an area of 200 km² in the Ebro Delta Basin (Àgueda et al. 2017; 10.1016/j.apr.2017.01.009).

We started a more extended survey in 2018-2019 to characterize the spatial and temporal variability of atmospheric CO₂ concentrations, increasing the transect longitude to 170 km. Measurements are made using a cavity ring-down spectrometer mounted on a car, that allow to take one measurement every 20 m. We repeat the survey every three weeks at sunset, dawn and noon, to cover both temporal and diel variation.

In this work we present the mosaic distribution of atmospheric CO₂ during the nonproductive period (between the burial of rice plant residuals and the start of laboring) in two different years (2012-2013 and 2018-2019), with the aim to study the spatial-temporal dynamics of CO₂ in paddy fields related to land management in rice agroecosystems.