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Ozone and carbon monoxide budgets over the Mediterranean Basin using CTM MOCAGE

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The Mediterranean basin (MB), surrounded by three continents with diverse pollution sources is a strong receptor of pollutants and air pollution. This region is also particularly sensitive to climate change due to its location and diversity of ecosystems.
In the framework of the ChArMEx (Chemistry and Aerosol Mediterranean Experiment project), we will particularly focus on O_3 and CO budgets and their evolution over the MB. We will use the chemistry transport model (CTM) MOCAGE, in order to investigate the importance of the long-range transport (LRT) above the MB. MOCAGE is the Météo-France multi-scale Chemistry and Transport Model, that covers a range of applications, from the study of climate-chemistry interaction to chemical weather forecasting. In our study, two nested domains are used: a global scale domain 2°*2° and a regional one over Mediterranean area at 0.2°*0.2°.
In a first step, we will evaluate the MOCAGE model outputs using: (1) surface O_3 and CO observations from AirBase networks and (2) measurement obtained during the TRAQA airborne campaign in summer 2012. In the second step, we will analyze the O_3 and CO budget terms over the MB and their evolution during the year 2012. The importance of regional emissions and the LRT are discussed.