Evaluation of different emission inventories on the O_3 and CO evolution within the CTM MOCAGE during the Pre-ChArMEx TRAQA campaign

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The chemistry-transport model MOCAGE, using meteorological forcings can use different emission inventories to describe and model numerous trace gases in the atmosphere. Each emission inventory has its specific resolution and its own variability. We present a study of the influence of two different inventories on the MOCAGE simulations. We use the IPCC (Intergovernmental Panel on Climate Change) and the MACC (Monitoring Atmospheric Composition and Climate) inventories. This comparison concerns the atmospheric species of ozone and carbon monoxide.
For this study, we performed a new nested domain within the version of MOCAGE at global scale(called MEDI02). This new domain has high horizontal resolution (0.2°x0.2°) and is centred on the Mediterranean basin. To guarantee the consistency of different chemical species in both domains, the boarders of the nested domain are controlled by the global
domain.
The evaluation of both emission inventories will be done by comparing MOCAGE fields to those measured during the Pre-ChArMEx TRAQA campaign 2012. The TRAQA (TRAnsport à longue distance et Qualité de l'Air sur le bassin méditerranéen) campaign took place on the Mediterranean basin from June 26 to July 11, 2012. During this experiment the ATR-42 aircraft of Météo-France and atmospheric balloons, operated by CNES, have been used to measure trace gases and aerosols. More than 60h of flight measurements and as many as during 7 Intensive Observation Periods (IOPs) with radio-sounding balloons and Boundary Layer Pressurized Balloons (BLPB).