



Analysis of seven years of SCIAMACHY/ENVISAT CO₂ retrievals over urban areas

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Carbon dioxide (CO₂) is the most important anthropogenic greenhouse gas and causes global climate change. A large fraction of the anthropogenic CO₂ is emitted in and around highly populated urban areas including megacities. Seven years (2003-2009) of global satellite nadir measurements in the near-infrared/shortwave-infrared (NIR/SWIR) spectral region have been used to retrieve column-averaged mixing ratios of CO₂, denoted XCO₂. This new multi-year global XCO₂ data set will be presented and it will be discussed to what extent and under which conditions regionally elevated XCO₂ resulting from urban area anthropogenic CO₂ emissions can be detected from space using data from the SCIAMACHY satellite instrument onboard ENVISAT.