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Application of the online coupled meteorology-chemistry model WRF/chem and the Lagrangian model GRAL to the Santiago de Chile region

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The use of online coupled air quality models becomes increasingly more widespread for air quality investigations in urban areas. For the current investigation the fully coupled online meteorology-chemistry model WRF/Chem is applied to the Santiago de Chile region for the year 2006. The impact of different anthropogenic emission mitigation scenarios is compared with the effect of biogenic VOC emissions. Additionally the impact of time dependent chemistry boundary conditions in comparison to fixed boundary conditions is considered as well as the effect of radiation-aerosol feedback (direct effect). In order to obtain a horizontal resolution at street level a simulation with the Lagrangian model GRAL is nested into the WRF/chem simulation with 4 km resolution.