



MAP3D: a mesoscale air pollution modeling tool

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The assessment of the regional (e.g. mesoscale) air pollution problematic needs the development of physical-chemical based model instead of dispersion and transport) mechanisms based models. A relatively new mesoscale air pollution modeling approach, integrating new modules for impact studies and forecast) namely **MAP3D** is presented here. The potential of realistic, calibrated, validated and thus representative outputs will be illustrated for different pollutants as O_3 , NO_x , CH_2O , CO and meteorological parameters in selected field campaigns (e.g. Grenoble, Strasbourg and Swiss Plateau). Comparisons and validation with representative 3D measurements (DOAS, LIDAR, radio- soundings, wind-profilers and aircraft) and results obtained by a combined 3D modeling - measurements approach will be shown. The item of air pollution regimes (NO_x/VOC) and specific indicators will be also addressed. Finally the capability of MAP3D for realizing representative studies, impact and scenarios and air pollution forecast as a policy maker decision tool will be discussed.

Keywords: physical-chemical based modeling, 3D, mesoscale, air pollution, photochemistry, ozone, indicators, VOC, NOX, planetary boundary layers dynamics