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AQA-PM: Extension of the Air-Quality model for Austria with satellite based Particulate Matter estimates

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Air quality is a key element for the well-being and quality of life of European citizens. Air pollution measurements and modeling tools are essential for assessment of air quality according to EU legislation. The responsibilities of ZAMG as the national weather service of Austria include the support of the federal states and the public in questions connected to the protection of the environment in the frame of advisory and counseling services as well as expert opinions. The Air Quality model for Austria (AQA) is operated at ZAMG in cooperation with the University of Natural Resources and Applied Life Sciences in Vienna (BOKU) by order of the regional governments since 2005. AQA conducts daily forecasts of gaseous and particulate (PM10) air pollutants over Austria.

In the frame of the project AQA-PM (funded by FFG), satellite measurements of the Aerosol Optical Thickness (AOT) and ground-based PM10-measurements are combined to highly-resolved initial fields using assimilation techniques. It is expected that the assimilation of satellite measurements will significantly improve the quality of AQA. Currently no observations are considered in the modeling system.

At the current stage of the project, different datasets have been collected (ground measurements, satellite measurements, fine resolved regional emission inventories) and are analyzed and prepared for further processing. This contribution gives an overview of the project working plan and the upcoming developments. The goal of this project is to improve the PM10-forecasts for Austria with the integration of satellite based measurements and to provide a comprehensive product-platform.