

Establishing high-resolution wind fields in Alpine areas using the mesoscale model GRAMM-SCI

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Air quality assessments in Alpine regions require wind fields with horizontal resolutions of the order of 100 – 200 m in order to adequately resolve topography and capture its influence on pollutant and odour dispersion. Air quality standards are defined for a complete calendar year (e.g. annual mean). Hence, hourly wind fields are necessary for an entire year.

It will be demonstrated how regional authorities in Austria are tackling this challenge by establishing so-called wind-field libraries using the mesoscale model GRAMM. Moreover, recent developments of a new branch named GRAMM-SCI will be outlined and first evaluation results will be presented.

Current problems and open research questions regarding wind-field modelling are highlighted, hopefully encouraging students and graduates to bring in their knowledge and enthusiasm in order to push forward this challenging area of research.

[1] <https://www.uibk.ac.at/acinn/graduate-seminar/index.html.en>