

BayCEER Kolloquium

Lectures in Ecology and
Environmental Research

WS 2019/20



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12:00 in H6, GEO

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Analysis of ozone formation and trend over northern Bavaria by using stochastic and deterministic models

The MiSKOR project is to provide the appropriate strategy to mitigate the impacts of climate change jeopardizing urban life through extreme high temperatures and resulting high surface ozone (O₃) concentrations. This talk is about the application of statistical tools in the trend analysis and modeling of O₃ formation in northern Bavaria (NB). The trend analysis of O₃ and O₃ health metrics is implemented on both regional (NB) and country scales (Germany). We also used linear- and tree-based gradient boosting machines (MLR-GBM and Tree-GBM) and logistic regression (LR) for the estimation, forecast and classification of hourly O₃ concentration data at unmonitored stations within NB. The performance of these statistical models is compared with the ensembles of seven state-of-the-art numerical air quality models run in the framework of the Copernicus Atmosphere Monitoring Service (CAMS) regional air quality model for Europe (CAMS-EU). This is the first attempt to check the feasibility of using a hybrid model from the combination of GBM and CAMS-EU simulations for the site-scale prediction of O₃.