

# Statistical Spatial Modeling of Gridded Air Pollution Data

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## **Abstract**

This paper aims to contribute to comparing gridded top-down and bottom-up inventories of atmospheric emissions. We propose a statistical (hierarchical Bayesian) model in which bottom-up emission assessments are treated as dependent variable and spatially explicit activity data are treated as covariates. The results of our illustrative example suggest excluding from further analysis two initially considered covariates, and indicate existence of another spatially correlated factor.