



## Analysing the influence of different street vegetation on particulate matter dispersion using microscale simulations

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### ABSTRACT

Urban vegetation can be viewed as compensation to the environmental drawbacks of urbanization. However, its ecosystem function is not well known and, for urban planning, vegetation is mainly considered as an element of urban design. This article argues that planning practice needs to re-examine the impact of vegetation cover in the urban fabric given our evaluation of vegetation's effects on air quality, including the law. In this paper, we use the method of microclimate simulation in Beijing city as an example, using the three-dimensional microclimate model ENVI-met, to evaluate these effects. The results are summarized as follows: (1) the concentration of pollutants in the winter is generally greater than that of the summer, (2) higher wind speed favors ventilation inside the streets, reducing the concentration of particulate matter, and (3) block effect on particulate matter of different vegetations which corresponds to the structures are shrub and grass vegetation combine > bushes and trees combine > shrub > tree > no greenery.

*Keywords:* Particulate matter; Road vegetation; Microclimate simulation

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