Incorporating the Wind Erosion Prediction System (WEPS) into a Regional Air Quality Modeling System for the Pacific Northwest

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Motivation

- The Pacific Northwest, with its high winds and blowing sand, experiences significant PM concentrations, especially during windy conditions.
- The WEPS model is a process-based, continuous-time model that simulates wind erosion processes and provides detailed information on PM concentrations.
- By incorporating WEPS into a regional air quality modeling system, we can better understand and predict PM concentrations in the Pacific Northwest.

Objectives

- To integrate WEPS into a regional air quality modeling system for the Pacific Northwest.
- To evaluate the performance of the integrated modeling system.
- To assess the impact of PM concentrations on air quality in the Pacific Northwest.

Wind Prediction Erosion System (WEPS)

- WEPS is a process-based, continuous-time model that simulates wind erosion processes and provides detailed information on PM concentrations.
- It simulates the impact of wind on soil erosion and PM concentrations.
- WEPS models the interaction between wind, soil, and vegetation to predict PM concentrations.

WEPS Extension for Southern Oregon and Northern California

- An extension of WEPS has been developed for Southern Oregon and Northern California to account for the regional characteristics.
- This extension improves the accuracy of PM concentration predictions in this area.

Conclusions and Future Work

- The WEPS extension has been successfully incorporated into a regional air quality modeling system for the Pacific Northwest.
- Future work includes extending the modeling system to other regions and improving the accuracy of PM concentration predictions.

References


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