



Blowing dust and highway safety in the southwestern US

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Windblown dust poses a significant hazard to highway safety. In the southwestern US, dust related chain-reaction traffic accidents occurred every year, however, no known studies have specifically investigated this issue in this area. Remote sensing and field observations reveal that wind erosion in this region typically occurs in localized source areas, characterized as “hot spots”, while most of the landscape does not erode. However, the spatial and temporal patterns of the hot spots and their relations to the occurrence of blowing dust to the highways are poorly understood. The lack of this critical information hinders highway managers to make informed and timely management decisions when wind events strike. Projected global changes, including changes in climate, land use, and land cover, will likely bring more frequent and extreme dust emissions to the southwestern US, including a majority of the Southern Plains, posing a serious threat to transportation safety in this region in the coming decades. Our preliminary investigation in west Texas indicated that a majority of the sources that contribute dust to the highways are located on sandy surface within a few kilometers of the highways and more than half of them are from cultivated cropland.