Abstract #301534

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Activity Number: 314
Type: Contributed
Date/Time: Wednesday, August 11, 2004 : 9:00 AM to 10:50 AM
Sponsor: Section on Statistics and the Environment
Abstract - #301534
Title: Spatial Distribution of Respirable Dust Concentrations in the Vicinity of a Jackhammer Operator

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Keywords: spatial distribution ; variogram ; respirable dust ; exposure ; occupation

Abstract:

In many studies, the extent of exposure to a particular agent at locations away from the source of that agent is of interest. In this study the spatial distribution of respirable dust concentrations in the vicinity of a jackhammer operation was investigated. A laser photometer was used to measure respirable dust concentrations at 30 points separated by two foot intervals on a 20 foot by 16 foot grid where the origin of the grid was the location of the jackhammer operator. Mean concentrations varied between 3.23 mg/m3 near the construction worker to 0.04 mg/m3 at the far ends of the grid. A semivariogram was constructed which indicated that the data followed a spherical model with a lag of two and maximum number of lags of four. The plot further indicated that at distances greater than 5.8 feet from the point of highest concentration no spatial correlation with other dust measurements would be found. Such information on the distribution of concentrations in the vicinity of the source of the agent is important in the occupational setting for determining appropriate use of protective personal equipment, establishing safe boundaries, or other control measures for other workers.

- The address information is for the authors that have a + after their name.
- Authors who are presenting talks have a * after their name.

Back to the full JSM 2004 program

Revised March 2004