



# Modelling and Simulation in Engineering

[About this Journal](#) [Submit a Manuscript](#) [Table of Contents](#)



## Journal Menu

- Abstracting and Indexing
- Aims and Scope
- Article Processing Charges
- Articles in Press
- Author Guidelines
- Bibliographic Information
- Contact Information
- Editorial Board
- Editorial Workflow
- Reviewers Acknowledgment
- Subscription Information

- Open Special Issues
- Published Special Issues
- Special Issue Guidelines

[Call for Proposals for Special Issues](#)

Modelling and Simulation in Engineering  
Volume 2008 (2008), Article ID 408075, 6 pages  
doi:10.1155/2008/408075

Research Article

## Simulation of Snow Drift and the Effects of Snow Particles on Wind

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Received 14 June 2008; Accepted 18 December 2008

Academic Editor: Andrzej Dzielinski

Abstract

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Linked References

How to Cite this Article

### Abstract

Coupled equations between wind and saltating particles are presented for a stable wind blowing over an infinite plane bed and the equations are solved for a simplified particle-bed impact process. The calculated results show that the saltating snow particles strongly affect the velocity distribution of the wind, causing a deviation from a logarithmically distributed wind velocity profile. The average height and length of saltating snow particle trajectories exponentially increase as the friction velocity increases; the ejected snow number flux and the streamwise snow transport rate also increase as the friction velocity increases.