

Factors Influencing the Spreading Pattern from Salt Spreaders

- **Dr. T. BRØCHNER**
- Associate Professor
- VIA UNIVERSITY COLLEGE
- tobr@viauc.dk

K. PERSSON

Senior Scientist

AARHUS UNIVERSITY- ENGINEERING CENTRE BYGHOLM – HORSENS, DENMARK



AARHUS
UNIVERSITY



Nordic research and development collaboration



The Team

K. Persson, J. Strøm & H. Takai, Aarhus University, Denmark

T. Brøchner, VIA University College, Denmark

0. CONTENT

1. INTRODUCTION

2. FISH TAIL DISTRIBUTION

3. CROSS WIND

4. AIR MOVEMENT AROUND SPREADER

3. METHODS TO MAINTAIN OPTIMUM SPREADING PATTERN

4. DISCUSSION

1. INTRODUCTION

Interaction between Wind and Salt

Natural Wind >> Controlled Wind

Full Scale >> Scale Model

FISH TAIL
DISTRIBUTION

AIR
MOVEMENT
AROUND
SPREADER

CROSS WIND

Test hall

Wind tunnels

METHODS TO MAINTAIN OPTIMUM SPREADING PATTERN

DISCUSSION: CONCLUSION & FUTURE WORK

2. FISH TAIL DISTRIBUTION

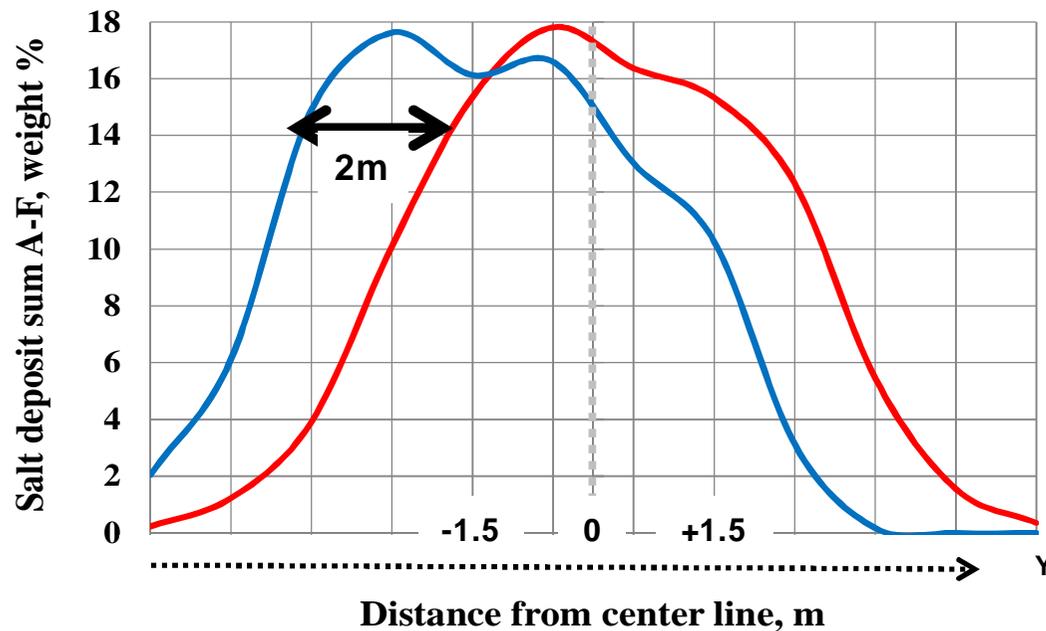
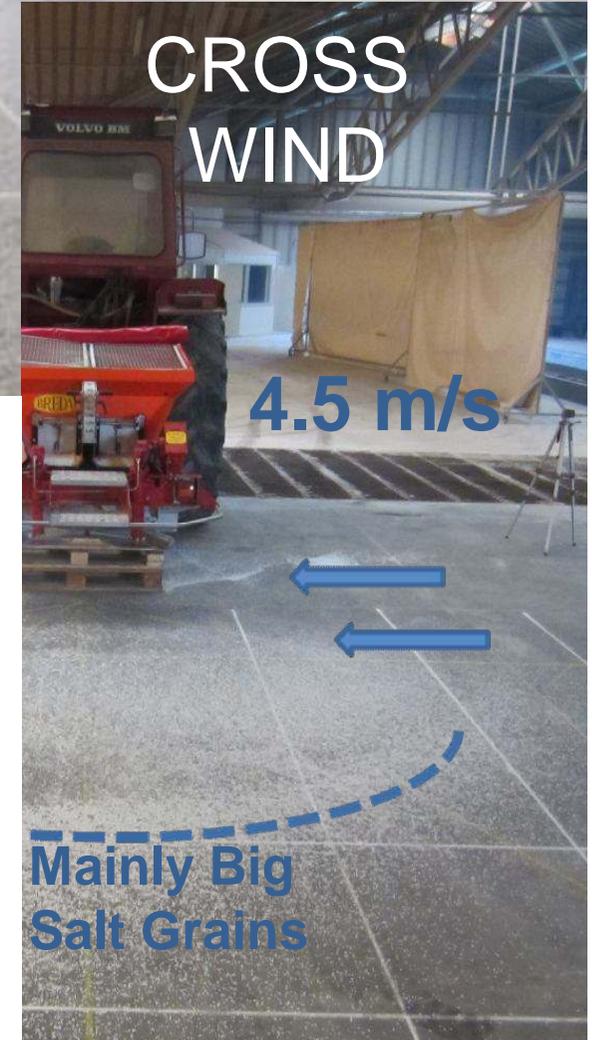
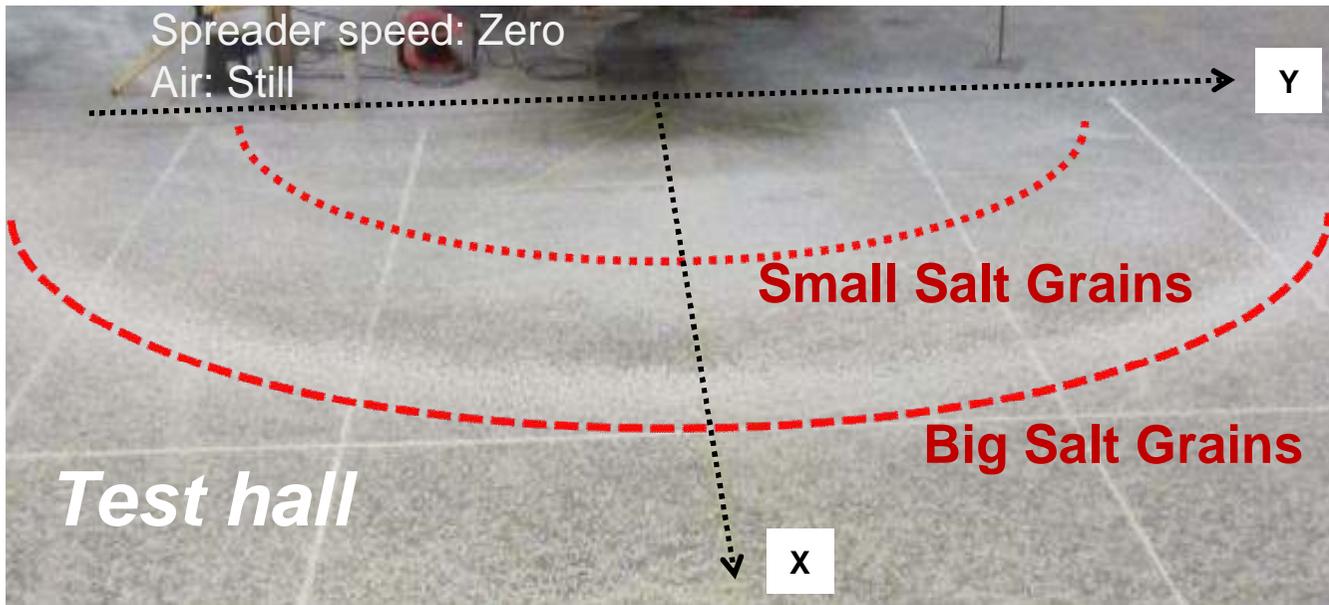


von Kármán vortex street

Induced turbulence simulation (CFD)

A 3D CFD simulation showing a purple rectangular object (representing a truck) moving through a flow field. The flow field is colored with a gradient from blue to red, indicating the intensity of induced turbulence. A red cloud-like shape is drawn over the turbulence field, containing the text "Induced turbulence simulation (CFD)".

3. CROSS WIND

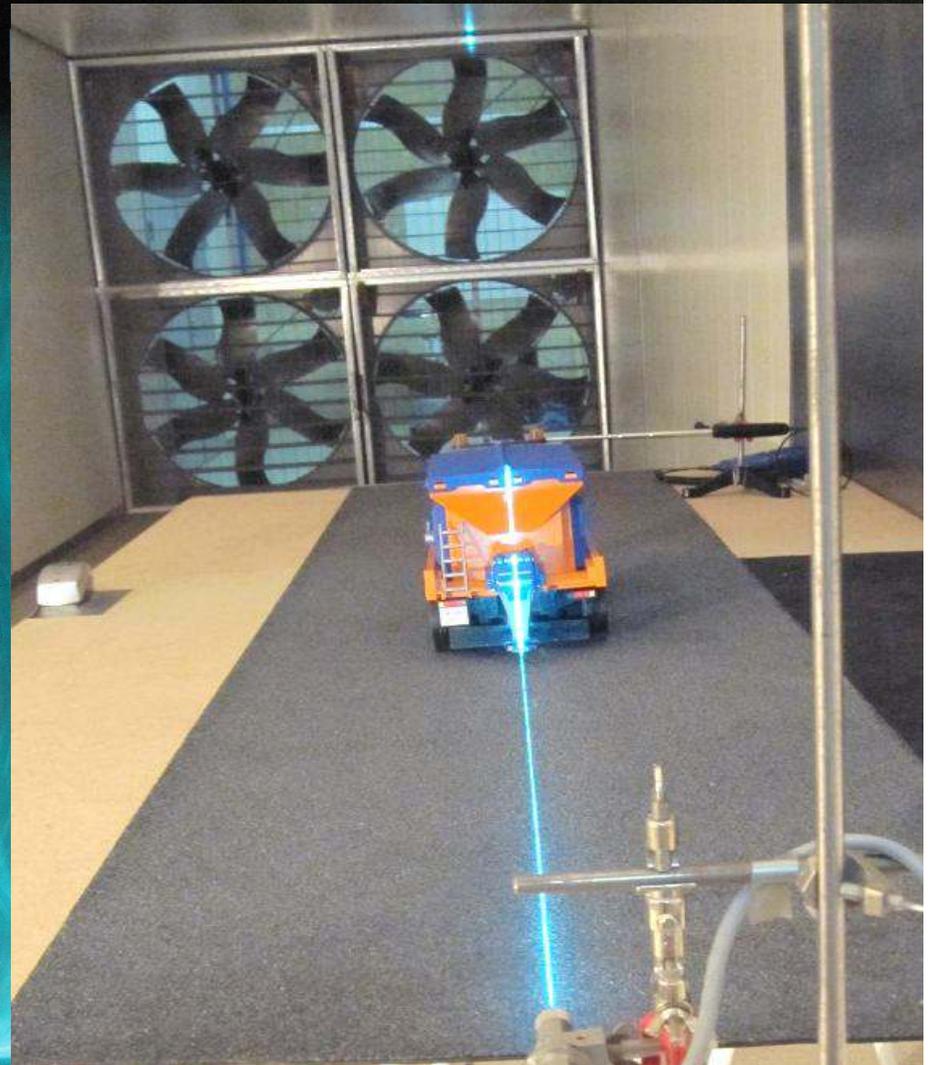


4. AIR MOVEMENT AROUND SPREADER

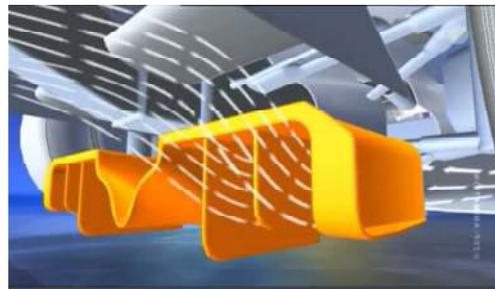
Rear Wind Field



New Big Wind Tunnel



5. METHODS TO MAINTAIN OPTIMUM SPREADING PATTERN



Flow Control Methods from Formula 1

- Wings
- Diffusers
- Strakes

Salt Spreader Applications Top Spoilers...

6. DISCUSSION



THANK YOU FOR YOUR ATTENTION!

R&D Cooperation
Wake Zone

Krister Persson: krister.persson@eng.au.dk

Torben Brøchner: tobr@viauc.dk

ENGINEERING CENTRE BYGHOLM – HORSENS, DENMARK