European Network on New Sensing Technologies for Air Pollution Control and Environmental Sustainability - *EuNetAir*

COST Action TD1105

INTERNATIONAL WG1-WG4 MEETING on

New Sensing Technologies and Methods for Air-Pollution Monitoring

European Environment Agency - EEA

Copenhagen, Denmark, 3 - 4 October 2013

POSTER SESSION

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SHOULD POLLEN BE INCLUDED IN AIR POLLUTION EXPOSURE ASSESSMENT? A STUDY OF POLLEN-POLLUTION CO-EXPOSURE IN COPENHAGEN, DENMARK.

AARHUS UNIVERSITY
DEPARTMENT OF ENVIRONMENTAL SCIENCE

Pia Viuf Ørby

Early Stage Researcher

Aarhus University / Denmark

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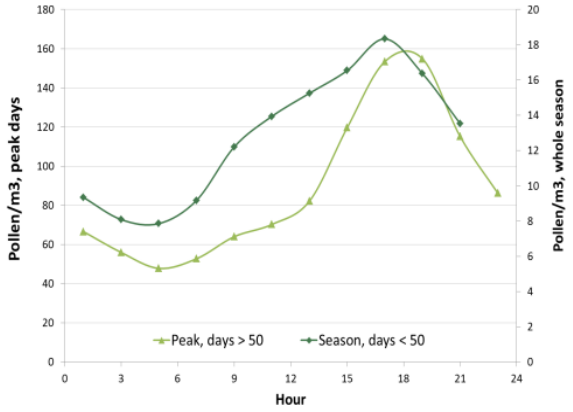
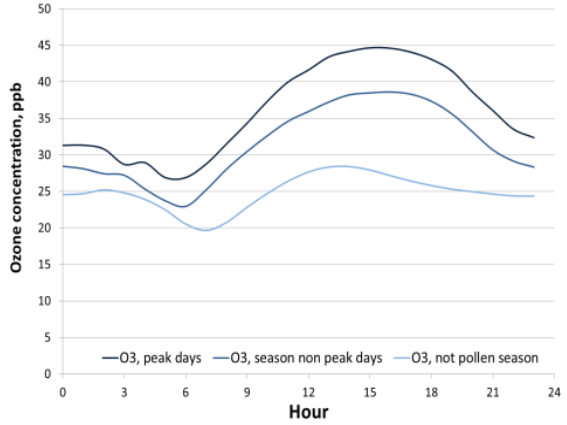
Scientific Context and Objectives

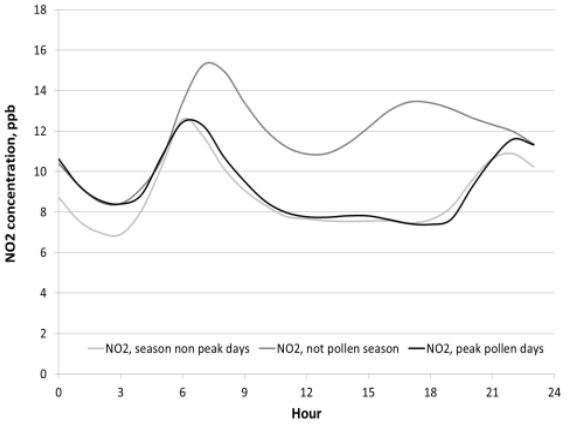
- Up to 40% of the population in European countries suffer from pollen allergy – "Common, costly and neglected (Lancet, 2008)".
- Co-exposure of air pollution and pollen are known to illicit and exacerbate airway diseases.
- Future monitoring of air pollution should include pollen and warning levels should consider co-exposure effects of allergens.
- But what are the levels of co-exposure?
- Analysis of diurnal pattern of 15 years of data (1997-2013) from Copenhagen on grass pollen, O_3 and NO_2.

RESULTS

- What are the levels and pattern on:
  - peak pollen days?
  - remaining days of the pollen season?
  - remaining days of the year?
- Pollen peaks in the early evening.
- NO_2 peaks in the morning – Not coinciding with pollen peak.
- <u>Ozone peaks in the afternoon, coinciding with pollen. Levels are significantly higher on peak pollen days.</u>







CONCLUSIONS and Future Activities

- Days with high pollen counts are often sunny days, and ozone formation from NO_2 increases with increasing sunlight.
- Higher pollen – Higher ozone.
- Co-exposure of pollen and NO_2 does not appear to be a problem.
- Future work will include PM and data from both background and street level.

Pollen data is supplied by Asthma Allergy Denmark.

For further information please write to piv@dmu.dk