

## Problem package 5

2012-02-22

Course: Environmental science FFY471

**Due time: Feb 29 at 16.15**

Submit by email to [bertil.dynefors@chalmers.se](mailto:bertil.dynefors@chalmers.se) or give the answers to Bertil in paper version.

Computer written text is preferred, but hand writing is allowed.

The work is individual. **No text may be copied** or directly taken from any material.

Images, figures and tables may however be copied.

The aim of this problem package 5 is to study environmental aspects of aerosol pollution.

- 5A Study the PM<sub>2,5</sub> and PM<sub>10</sub> concentrations at one place in Gothenburg during one month. Link from homepage  
<http://fy.chalmers.se/~funbd/MV/MVMF-12.htm>  
Characterize, from a data graph, the aerosol pollution situation in that place in Gothenburg during the studied month. What is the relation to legislative or recommended limits?  
Try to explain variations of the concentrations and possible causes of the variations. (Unfortunately the English version seems not to work. It should be enough to use the graph and make conclusions from it.)
- 5B Aerosol particles influence the climate.  
Describe mechanisms and phenomenon involved in the climate influence of the particles. Consider both direct effects and indirect of the particles.  
(One link on the homepage)
- 5C The health effects of aerosol particles.  
How does one find out the health effects?  
Discuss different types of investigations to reveal the health effects of particles. Summarize the (possible) course of events between exposure to (aerosol) particles and an eventual health effect.  
The answer is expected to be based on the link  
<http://www.crcnetbase.com/isbn/9781566706117>  
(You probably must be inside the Chalmers domain to see this Aerosols Handbook. Go to Chap 24 by Ira B. Tager. If problems to see the link, mail me and I will download and send it as attachment.)

(5C is expected to be the major question, which should be treated extensively, 5B in the middle and 5A can be given a shorter, but still substantial, answer.)

This problem package 5 will be graded F, 3, 4, 5.

Individual and original structure and treatment of the issues and substantial level on the content will be highly estimated in the grading. Do not write in too general terms, try to be specific and substantial.