Anderson et al.,Science**,** 300 (5622): 1103-1104  **Climate Forcing by Aerosols--a Hazy Picture**

- Explain the différences between ‘’forward calculations’’, ‘’inverse calculations’’ and ‘’applications’’ when talking about climate forcing.

- What is meant by ‘’a Hazy Picture’’ in the title of this paper ?

- How will climate forcing evolve in the future (2030, 2050, 2100) ?

Koch et al., Atmos. Chem. Phys., 9, 9001–9026, 2009, **Evaluation of black carbon estimations in global aerosol models**

- How does black carbon differ from the other aerosols such as sulphate, nitrate and sea-salt ?.

- Why is Absorption Optical Depth (AAOD) such an important quantity?

- Where do model differ most,

- Could you think of improvements that can be included in the models to better represent the properties of Black Carbon ?

Dlugokencky et al., Phil. Trans. R. Soc. A 2011 369, 2058-2072doi: 10.1098/rsta.2010.034, **Global atmospheric methane: budget, changes and dangers**

**-** Define the indirect forcing by methane, explain which species are affected.

* Why can CH4 emissions be estimated with more accuracy then the emissions from a given sector?
* How will accurate estimates from given sectors influence policy making in the future?

Bousquet et al., Vol 443|28 September 2006|doi:10.1038/nature05132, **Contribution of anthropogenic and natural source to atmospheric methane variability**

* Why are the authors interested in studying methane growth rates?
* Can you think of processes that will affect anthropogenic/natural sources of methane ?
* Discuss the merits and flaws of the inversion technique(s)

Shindell et al., Science, 335, 183-189, **Simultaneously Mitigating Near-Term Climate Change and Improvins Human Health and Food Security**

Why choose CH4 and BC for mitigation, how does their respective radiative forcings compare with the one of CO2?

What are the significant effects of reducing CH4 and BC concurrently?

Which are the most important emission controls that can be applied?