

Evaluation and improvements of **traffic sector emissions 1**

impression Yuxuan Wang & Hugo Denier van der Gon

- New inventories become available or are in progress for under-represented regions (Africa (presented) < S. America (quoted)< Asia (pr)< EU + N-Am (pr)
- Introduces many region-specific features; EFs, key sources differ, reliability of Fuel use data – creates diverging information but increases realistic representation! Yes - a step on the way to net improvement....
- Still strong underrepresentation of Africa, S.Am., parts of Asia - GEIA should support such regional (traffic sector) initiatives where it can....
- Why? Changes can be dramatic (E.g Liousse et al.) : suddenly you have a factor 3 more OC/yr for Africa – does it fit in observational data? And if only 1 estimate is available all is in agreement (but not really....;-)
- Shows (or from this follows) also projecting to future years should not simply follow generic (energy) modelling or extrapolation as done for EU + N.AM: can vary dramatically – this is highly (policy) relevant but how to communicate?
- Conclusion: Transferability is limited! For example, you cannot understand Africa based on a good understanding of Europe! Certainly not predict 2050 situation. Sounds logical but is it practised?
- No...studies/models will use what ever is there....even if it is garbage

Evaluation and improvements of **traffic sector emissions 2**

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- New technologies emerge to improve the inventories for transport e.g. satellite data (Bickford (US), Boersma (global), AIS for ships (Jalkanen), Eddy Cov. (Velasco). Brings in “fresh” food for thought (& improvement)
- Satellite retrievals make the world smaller – same method for region A and B
- But..... Sometimes show where emissions should be higher/lower but do not yet address the why? Important if not crucial next step!
- Examples can be selected “cut-outs” e.g., specific seas (Jalkanen) and/or ship tracks (Boersma). Knowledge on shipping emissions will make a big leap forward – much more complicated for (mixed) land-based sources (boersma emission changes over China)
- Asks for a reaction and involvement of the GEIA community – handshake of bottom-up and top-down....

Evaluation and improvements of
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- Important feature of presentations was within-region variation! From a global perspective we think in terms of Africa, China – work (Liousse, Wang) shows large within region variation – bot under & over estimations occur within the region – so where do you look to find what?
- Needs deeper (detailed) level of emission process understanding
- Emission inventory community can be more pro-active: Yes, EIs are uncertain but not the only uncertainty – that is too easy many more things are relevant: e.g. Wang et al. actively pursue other uncertainties than the EI... shows the maturity of the analysis, starting with EI work but than expand to the bigger picture – open to all, discuss all....