



Land cover maps, BVOC emissions, and SOA burden in a global aerosol-climate model

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It has been reported that different land cover representations influence the emission of biogenic volatile organic compounds (BVOC) (e.g. Guenther et al., 2006). But the land cover forcing used in model simulations is quite uncertain (e.g. Jung et al., 2006). As a consequence the simulated emission of BVOCs depends on the applied land cover map. To test the sensitivity of global and regional estimates of BVOC emissions on the applied land cover map we applied 3 different land cover maps into our global aerosol-climate model ECHAM6-HAM2.2. We found a high sensitivity for tropical regions.

BVOCs are a very prominent precursor for the production of Secondary Organic Aerosols (SOA). Therefore the sensitivity of BVOC emissions on land cover maps impacts the SOA burden in the atmosphere. With our model system we are able to quantify that impact.

References:

Guenther et al. (2006), Estimates of global terrestrial isoprene emissions using MEGAN, *Atmos. Chem. Phys.*, 6, 3181-3210, doi:10.5194/acp-6-3181-2006.

Jung et al. (2006), Exploiting synergies of global land cover products for carbon cycle modeling, *Rem. Sens. Environm.*, 101, 534-553, doi:10.1016/j.rse.2006.01.020.