2. Black Carbon in Soils of Urban Areas and First Results from the 'SUITMA-Study'

NEHLS, Thomas

Berlin Institute of Technology

Abstract:
Black Carbon (BC), also called pyrogenic C, is a particulate, graphitic form of carbon. It is produced during incomplete combustion of biomass or fossil fuels or is a residue of it. Vegetation fires release 50-270 Tg/year of coarse grain charred material and 5-6 Tg/year of aerosol BC (Kuhlbusch, 1998). In contrast, fossil fuel burning contributes 6-9 Tg/year to the atmospheric BC. As the majority of fossil fuels are used inside urban areas and because BC is good marker for human activity, the topic is of interest for urban soil science. This paper gives an overview on BC, its production, important sources, accumulation, persistence and functions of BC in urban soils. For instance, BC is discussed as an adsorber for a number of organic contaminants.

In the second part, a study on roadside urban soils from all over the world is presented. Paved urban soils of some of the hometowns of SUITMA 4 attendees have been sampled and sent to Berlin. They have been analyzed for BC contents and their magnetic susceptibility (MS). Is there a relation between the combustion residues/products and the iron oxides causing MS as postulated during discussion at the SUITMA 4?

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Information of corresponding author
Full Name: Thomas Nehls
Organization: Berlin Institute of Technology
Mailing address: Salzufer 12, Room 203, 10587 Berlin
Tel: ++49 (0)30 314 73539
E-mail: thomas.nehls@tu-berlin.de