strong positive correlation (ρSSC-MP= 0.6) was found between SSC and MP; however, the correlation during floods (minor floods: ρ= 0.63; medium floods: ρ= 0.41) was higher than low stags (ρ= 0.1). This behavior could be interpreted that during floods, both SS and MP transport might be driven by flood-based sources/factors (e.g., runoff and (re)-mobilization of deposited materials); meanwhile, during low stages, they might have different origins. On the other hand, moderate negative correlations (ρ2021= -0.35; ρ2022= -0.41) were found between the SSC and MP transport at the two-years longitudinal measurements. However, it must be noted that these measurements were performed during low stages, therefore, additional measurements during (overbank) floods with a denser sampling schema are required to gain more insight into the spatiotemporal changes of SS and MP transport in rivers.

Results of a harmonized micropollutant monitoring program shed light on systematic differences between regions of the Carpathian Basin

Máté Krisztián Kardos*, Zsolt Jolánkai, Adrienne Clement
Budapest University of Technology and Economics, Department of Sanitary and Environmental Engineering
**kardos.mate@emk.bme.hu*

There is a growing awareness of the fact that chemicals of everyday usage usually end up in the environment resulting in degraded functioning of the ecosystems. In a one-year sampling campaign conducted in four medium sized catchments of the Carpathian Basin: Wulka, Austria (389 km²), Koppány, Hungary (660 km²), Zagyva, Hungary (1200 km²) and Somesul Mic, Romania (1850 km²). Atmospheric deposition, soil and river water was sampled. Samples were analyzed for eight heavy metals (HM: Cr, Ni, Cu, Zn, As, Cd, Pb, Hg), the 16 US-EPA polycyclic aromatic hydrocarbons (PAH) as well as 12 polyfluoroalkyl substances (PFAS).

The research sheds light on basic differences between the compound groups as well as the pilot areas. For example Cr, Ni and Zn show increasing concentrations in soil from western to eastern regions whereas the opposite is observed for PAH and PFAS. Differences in economic development of the particular regions is suspected to be the underlying reason.

Regarding concentrations measured in river water samples, total HM always exhibited higher levels during high flow compared to low flow conditions. In contrary, dissolved HM were mostly in the same range regardless of the flow situation, except for dissolved Cu (it was higher during high flow than during low flow) and dissolved As (it was lower during high flow than during low flow). Regarding the two exception, an explanation seems apparent: As (dissolved into groundwater from the base bedrock and entering the river in form of base flow) is diluted by overland flow, whereas the higher total concentration of Cu during high flow events is caused by higher levels of

Cu in runoff from agricultural (especially orchards and vineyards) areas compared to groundwater flows.
To sum up: similarities (e.g. tendentious difference between agricultural and forest soil, both for HM and PAH) and differences (decreasing trend in soil PAH concentration levels from west to east) exist at the same time, which fact underlines the importance of overarching, systematic and harmonized data collection and monitoring programs.

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