

Suspended sediment attached heavy metal pollution in an urban river basin (the Chamberonne, VD)

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Population growth in Switzerland has led to increasing environmental and hydrological pressure on urban watersheds. Various types of organic and non-organic pollutants with different origins have been monitored in such catchments. These issues can for instance be understood by modelling approaches. However, in order to understand contaminant transport, analysis must take into account the chemical processes driving contaminant partitioning and mobility. Physical and chemical parameters such as solid particle size and organic matter content in the system can greatly improve insight into the processes driving metal transport.

This work's aim is to describe metal transport in the Chamberonne catchment with a focus on copper and zinc attachment to particles. These elements are known to be present in non-negligible quantities in the catchment and to have different anthropogenic origins.

Eventually determining the ratio at which the metals coexists as well as the links with particle size and organic content should provide a strong basis for the description and interpretation of the processes through which metals reach and travel into the catchment. Figure 1 shows an example of such a relationship; the observed negative correlation between the amount of copper present in particles and their median size.

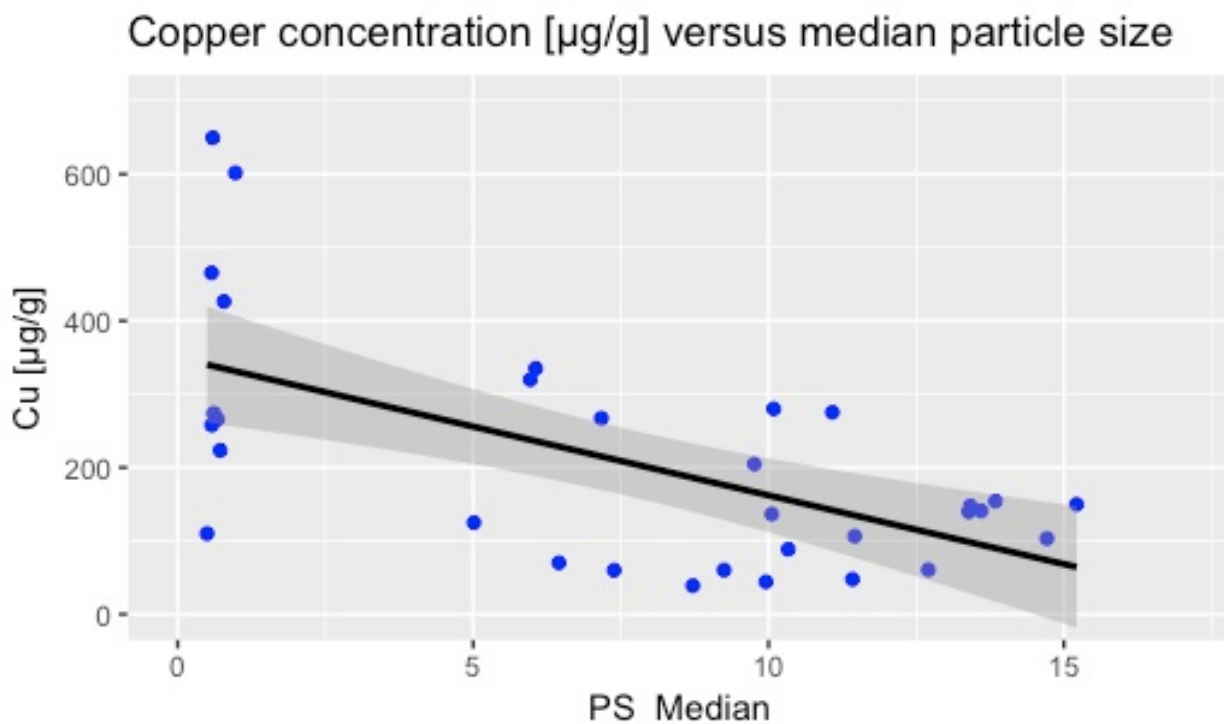


Figure 1 : Observed negative correlation between suspended particles' size and Copper content