



## **Acidity and origin of dissolved organic carbon in different vegetation zones**

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The acid/base character of aquatic dissolved organic carbon (DOC) has been studied intensively during recent decades with regard to the role of DOC in stream water acidity and the balance between natural acidity and anthropogenic acidification. Recently, DOC has been shown to play an important role in preindustrial surface waters. Studies focused on the acid/base properties of DOC have been carried out in mainly in Europe and North America and paint a conflicting picture. Some studies reported large differences in acid base properties, sometimes between quite similar and nearby localities, or between seasons at the same site. Other studies, however, found similar acid/base properties in waters from a variety of sites, sometimes far from each other as well as stable acid/base properties at the same site through different seasons or runoff events. Site density of DOC (amount of carboxylic groups per milligram of DOC) and SUVA was measured for streams (or small tundra ponds respectively) from the tundra in northern Alaska, boreal zone of Sweden, western Czech Republic (temperate region), and tropical Congo rain forest in central Africa. At least 10 samples from each region were taken from surface waters during the growing season. Titration of carboxylic groups after proton saturation on cation-exchange resin was used for site density determination. Despite very different climatic and vegetation properties and internal variation within a region, there was no statistically significant difference among regions for site density (it varied between 10.2-10.5 ueq/mg DOC) as well as for SUVA (tested by ANOVA).

Results suggest that different vegetation and climate produced generally the same DOC in respect of acid/base character and SUVA. It also suggests that use of the one analytical technique was more important than differences between climatic zones itself.