

Behaviour of a little Solimoes's tributary: the Purus

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The first study of the molecular size distribution and fluxes of organic carbon from the Rio Purus to the Amazon River is reported in this talk. The Rio Purus, which drains the sediments of the sub-Andean trough and of the central plain, is a tributary of the Rio Solimoes. Organic carbon measurements using sequential tangential ultrafiltered (STUF) and discharge measurements give original information of the Purus basin, which has not been studied much until now. Firstly for the rivers of this basin the total organic carbon values and the molecular size distribution are similar to those found for white waters. In addition two sampling sites of the Purus River show a very large concentration (>80%) in the dissolved material. This distribution is similar to those of the Rio Madeira and this is all the more curious since the Rios Purus and Madeira do not drain the same kind of soil. Afterwards, the Rio Purus distribution is severely modified by two small tributaries, inducing non-conservative transformation.

Moreover a good estimate of the Rio Amazonas carbon flux and discharge at the Óbidos station was also determined. For the Amazon basin, this work has confirmed the carbon size redistribution and flocculation/coagulation phenomena at the confluence. Indeed during this seasonal campaign, there was a large size transfer from particulate to colloidal and dissolved form during water mixing of fresh waters but no significant loss of carbon was observed after the formation of the Amazon River. This dynamic exchange between the fractions is important for some phenomena such as metals transport by the organic matter because the metals transport and the molecular mass distribution of associated metals to organic matter are closely linked to the size of the organic material.

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