



## **Characterization of organic matter in a soil sequence at a laterite/podzol transition in the upper Amazon basin. Implication for organic matter exportation in black waters**

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In the Rio Negro basin, podzols develop at the expense of clay-depleted laterites through localised and spectacular weathering fronts. In these environments, organic matter is a major driver in the podzolisation of clay-depleted laterites, especially through its ability to weather clay minerals and chelate metals. Its structure in seven organic-rich samples collected at the margin and in the centre of the podzolic area of a soil sequence was investigated. The samples illustrate the main steps in the development of waterlogged podzols and belong either to eluviated topsoil horizons or to illuviated subsoil horizons. This natural podzolization process leads to the remobilization of previously accumulated organic matter and elements such as Al, Fe or Si. Organic matter is thus redistributed within soil profiles and exported towards rivers, giving them their typical black coloration. In soils, this redistribution leads to a strong vertical variation of organic matter characteristics in podzols. However, little is known about the structure of organic matter transferred to rivers, and about the relative contributions of the different soil horizons to this exportation. To investigate the fate of organic matter in the soil – water continuum in the Rio Negro basin, we have water-extracted organic matter from the aforementioned key soil samples and compared their chemical features with organic matter from the water-tables and rivers draining the soil sequence. Thanks to the identification of specific compounds in the different horizons, we showed that organic matter is mainly remobilised in deep horizons of well-developed podzols.