

# **Distribution of chromium and thallium species along the Amazon and Pará estuaries and mixing plume**

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The Amazon and Pará estuaries are well-known major sources of trace elements and dissolved organic matter to the Atlantic Ocean. However, recent data for metal species, such as chromium and thallium, in this region are sparse. This work presents a speciation study for Cr(VI) and Tl(I) in the Amazon and Pará River estuaries and mixing zone. Samples were collected during the RV Meteor cruise M147 (Amazon-GEOTRACES, April/May 2018) in the Amazon and Pará River outflow regions and the mixing plume. This talk will present the results for total dissolvable ( $>0.2 \mu\text{m}$ ), and total dissolved ( $<0.2 \mu\text{m}$ ) fractions of Cr(VI) and Tl(I) in surface samples using a sequential method by adsorptive cathodic stripping voltammetry (AdCSV) with diethylenetriamine pentaacetic acid (DTPA) as a complexing reagent (6.25 mM). Cr species were determined at pH 6.2, being Tl species determined sequentially after addition of acetate buffer (pH 4.6) to the working electrolyte. We observed that Cr species decreased with increasing salinity. However, Tl species decreased only at low-salinity regions ( $S \sim 0-10$ ), showing a relative constant distribution up to high salinities ( $S \sim 35$ ). For Cr species, a non-conservative distribution was observed within the whole salinity gradient, probably due to biological uptake and flocculation processes. In general, the distribution of the dissolved and total dissolvable species was observed in the range of 0-20 nM for Cr and 0-10 nM for Tl in the whole salinity gradient. The distribution of particulate Cr and Tl species was also calculated for the studied samples.