



Interannual variation in offshore advection of Amazon-Orinoco plume waters: observations, forcing mechanisms, and impacts (S  verine Fournier)

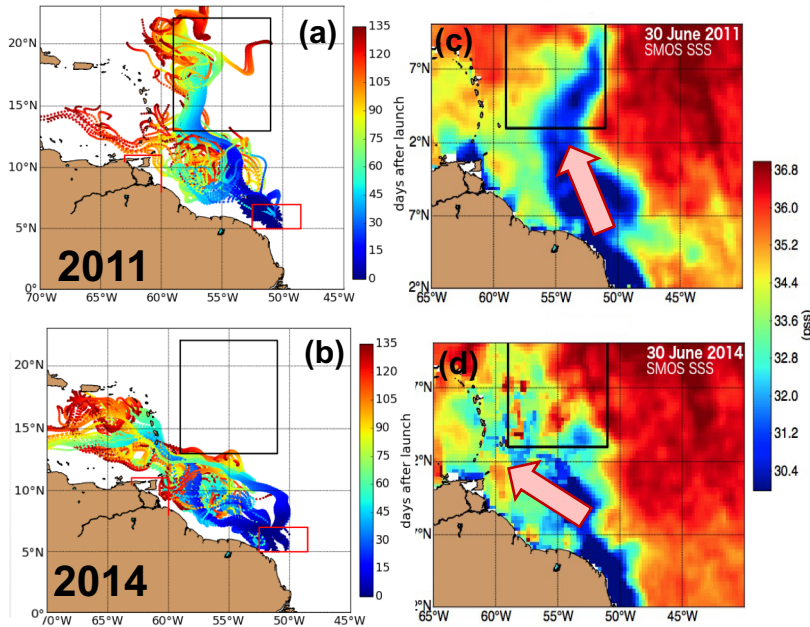


Figure: (a-b) Trajectories of virtual drifters launched on the 15th of June 2011 (a) and 2014 (b) from near the Amazon mouth (red square) (colors: transit time in days). (c-d) 10-day running mean SMOS SSS maps for the 30th of June 2011 (c) and 2014 (d).

Science Question: Sea surface salinity (SSS) and sea surface temperature (SST) variations in the northwestern tropical Atlantic, a region impacted by freshwater advection from the Amazon and Orinoco Rivers have potential implications to air-sea interactions.

Data & Results: The areal coverage of the Amazon-Orinoco river plume in the northwestern tropical Atlantic shows spatial variability (2011 vs 2014) that is not due to variations in the discharge but to eddy-driven transport and variability in cross-shore wind. Interannual variation in Amazon advective pathways and the associated SSS changes are also influenced by changes in the ITCZ position between 2011 and 2014.

Significance: Satellite observations can provide a comprehensive view of surface ocean variability and its controls to improve our understanding on how upper ocean variability couples to atmospheric dynamics (convection, rainfall, interaction with tropical cyclones).