



## **Inter-ocean freshwater transport through the Atmosphere from the Atlantic to the Indo-Pacific Ocean**

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The sea surface salinity (SSS) in the Atlantic Ocean is higher than that of the Pacific Ocean, although the Atlantic and Pacific Ocean are situated on the same latitudinal belt. Several hypotheses including contrasts in basin geometry, presence of multiple equilibria of the Meridional Overturning Circulation, inter-basin salt transport and arrangement of mountain ranges put forward to describe the asymmetry. As atmosphere does not have a boundary, moisture transport from different ocean basins can contribute to the low SSS of the Pacific Ocean. The objective of the present study is to quantify the freshwater transport from the Atlantic Ocean to the Pacific Ocean through the Eastern boundary (over Central America) and Western boundary (over Africa-Europe-Asia) and the associated atmospheric processes using Lagrangian zonal overturning stream function approach. The noticeable findings are the subtropical westerlies are the main drivers for the water mass particles to reach the Pacific Ocean over Africa-Europe-Asia and trade winds are helping the water mass particles to reach the Pacific Ocean over Central America. Seasonal pattern of the inter-ocean freshwater transport has also analyzed.