



The equatorial Atlantic sea surface temperature variability during the last millennium

Luciana Prado (1), Ilana Wainer (1), and Myriam Khodri (2)

(1) Instituto Oceanográfico, Universidade de São Paulo (IOUSP), Brazil, (2) Laboratoire d'Océanographie et du Climat: Experimentations et Approches Numériques (LOCEAN), France

The study of the variability patterns of the South Atlantic Basin is necessary to understand and predict the global climate because of its fundamental role in global climate control through heat transport to the North. As early as 330 years ago, the importance of the continental heat budget on the equatorial Atlantic Ocean driving the trade winds in the Gulf of Guinea was identified. However, only five decades ago studies started to understand the effects of these air-sea interaction processes over the Atlantic sector. More specifically, changes in continental rainfall are linked to the interannual variability of the equatorial Atlantic sea surface temperature, which is related to the Atlantic Niño. Here we aim to examine air-sea interaction processes in the tropical Atlantic region during key periods within the Last Millennium (LM, 850 to 1,850 Common Era, C.E.). This will be achieved by computing an index to the variability of the equatorial Atlantic sea surface temperature during the LM. This variability pattern will be obtained from the National Center for Atmospheric Research – Community Climate System Model, version 4 (NCAR-CCSM4.0) and the Institut Pierre Simon Laplace – Climate Model version 5A, low resolution (IPSL-CM5A-LR) transient runs. We expect to use this index to identify possible differences in the sea surface field between the Medieval Climate Anomaly (MCA, 950 to 1,250 C.E.) and the Little Ice Age (LIA, 1,400 to 1,700 C.E.).