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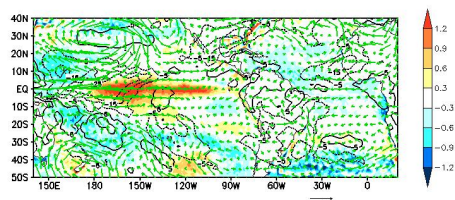
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Impact of ENSO Modoki in Paranaiba Catchment, Brazil

Netrananda Sahu^{1*}, Yosuke Yamashiki¹, Swadhin Behera³, Kaoru Takara¹, Toshio Yamagata⁴

¹DPRI, Kyoto University, ²Research Institute for Global Change, ³Application Laboratory, JAMSTEC, ⁴School of Science, Tokyo University

The climatology of stream-flow at the Fazenda Santa Maria gauge station of the Paranaiba River in Brazil shows significant flow during November to May and very less flow during June–October. The variation in this seasonal stream-flow significantly affects the human population. So, it is important to understand the underlying mechanisms that cause that variation. Since the variability of climatic conditions in Pacific Oceans are main driver of the rainfall variability over the La Plata basin, their roles in river stream-flow is explored in this study. A scientific analysis is made to link the stream-flow variability with the rainfall and SST variations over the Pacific Oceans on daily time scale. The observed discharge data from 1974–2006 (33 years) at the Fazenda Santa Maria, the down most outlet of the upper catchment, shows a strong correlation with the El Nino/Southern Oscillation (ENSO) and recently recognized ENSO Modoki events. In the December–February low stream flow events are influenced by El Nino Modoki and high flow events are influenced by La Nina. In March–May seasons high stream flow events are La Nina and few events are also influenced by La Nina Modoki, whereas this rainy season low flow events are influenced by El Nino Modoki than El Nino. The climate change induced ENSO Modoki events needs scientific study for this La Plata basins for the societal benefits.



Keywords: Stream flow, ENSO, ENSO Modoki, Climate variability, Paranaiba