



Eastern Pacific coastal dynamics and the Intra-Americas summer low level jet

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It is generally agreed that the circulation of the Eastern Pacific off México and Central America is forced in the summer by the large-scale circulation, namely the North Equatorial Countercurrent, and in the winter by strong offshore winds blowing through mountain passes in Mexico and Central America. This contribution describes a little known forcing mechanism for the eastern Pacific summer dynamics, the Intra-Americas Low-Level Jet, as well as its effect on the coastal circulation. The jet is described with the help of Quikscat data and pilot balloon data from the PACS-SONET project. Altimetry and climatological data are used to generate maps of geostrophic circulation to describe the mesoscale dynamics and some integral properties of the flow. The Intra-Americas Low-Level Jet is a climatic feature of the trade wind regime during summer. It develops during early June, reaches maximum intensity during July and decreases in intensity in late August early September. The jet core is located in the western Caribbean, around 80° W, 15° N near 925 hPa, with mean winds of about 15 ms⁻¹ during July. This makes the Intra-Americas Low-Level Jet stronger than most tropical low-level jets. The winds reach the atmospheric boundary layer near the ocean surface. Here we show the jet crossing Central America into the Eastern tropical Pacific through the mountain gap in Nicaragua and Costa Rica (12° N). The case study of 15 to 21 July, 2001 describes the effect of the wind on the coastal ocean. Integral properties such as the long-term mean kinetic energy show the relevance of the phenomenon.