



Seasonal and interannual variability of the eastern boundary circulation and hydrography off Angola

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Coastal countries of southwest Africa strongly depend upon their ocean: societal development, fisheries, and tourism face important changes associated with climate variability and global change. As an example, Angolan fisheries are currently reporting reduced catches that may be associated to variability of the eastern boundary circulation and water masses along the Angolan continental margin. In an effort to enhance understanding of the seasonal and interannual variability of the boundary circulation and thermocline water masses and their relation to warm and cold events in South East Atlantic, existing in-situ observations from a multi-cruise program were analyzed.

Repeated hydrography and ship-board ADCP measurements from the EAF - Nansen Project collected during the Austral summer and winter period between 1995 and 2014 are used. From the ship-board velocity measurements, the average eastern boundary circulation at 6°S, 9°S, 12°S, 15°S and 17°S is presented for the summer and winter period. CTD data collected during the 24 cruises along the Angolan continental margin exhibit elevated interannual variability of heat and salt content in the upper thermocline between 50 and 150m depth. Warm and cold anomalies in the upper thermocline are strongly correlated to the Angola-Benguela area index and precede the respective sea surface temperature signal. The known warm events in 2001 and 2011 are well represented in the subsurface data. This suggests that thermocline heat anomalies serve as a preconditioning for the occurrences of Benguela Niños/Niñas. The processes responsible for the interannual variability of thermocline heat and salt content are discussed.