oceanographic cruise realized during 1992 (El Niño year) were used to compute phase speed of theoretical coastal trapped waves and to compare with estimated phase speed from wavelet spectra.
For the studied El Niños phenomena, we found the existence of intraseasonal oscillations with periods between 20-90 days, between latitudes 2°S and 27°S. We detected oscillations with strong correlation between sea level and local wind, with periods of around 10 days, wich could be associated with "coastal lows", which are atmospheric trapped waves. These oscillations were more intense during El Niño 1991-92. At the peak of the El Niño events, between 6°S e 15°S, we found observed perturbations probably associated with remotely forced internal kelvin waves wich propagate, with periods between 6-50 days with phase speeds between 180-340 km/day. In the region comprised between 12°S and 15°S, we also identified perturbations probably associated barotropic shelf waves propagating southward with velocities between 110 and 150 km/day and periods between 30 and 40 days.
These poleward propagating intraseasonal perturbations off the west coast of South America probably are linked with equatorial wave dynamics, especially during El Niño events, and can have a significant influence in modulating the upwelling system and primary productivity in the region, which is one of the most productive all around the world.

HCS160 - Intraseasonal to annual variability at Paita (5°S) during 1999-2006

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Keywords: Coastal trapped waves, Equatorial Variability, Intraseasonal and near-annual oscillations, Model simulations, Peru Undercurrent, Vertical structure variability

A combination of *in situ* data, satellite data and regional model simulations are used to investigate the vertical structure variability off Paita [Peru, 5°S]. The focus is on the connexion with the equatorial variability at intraseasonnal and near-annual timescales considering that the high-frequency forcing from equatorial origin, although with a weaker amplitude than ENSO events, can also drastically impact marine resources. The observing system at Païta consists in a coastal automatic ocean-meteostation and microscale and mesoscale cross-shelf sections at 20 nm and as far as 200 nm off-shore that continuously measures temperature and salinity on the shelf and in the upper 500 m layer on the continental slope. The comparison between the two sites reveals a contrasted vertical structure variability which corresponds to different dynamical regimes. Whereas the vertical structure variability on the slope is directly influenced by the equatorial variability through coastal-trapped wave activity, the variability on the shelf is dominated by mesoscale recirculation. Combined to altimetric sea level data and an estimate of the equatorial Kelvin wave amplitude from SODA Reanalysis, the *in situ* data and regional atmospheric and oceanic model simulations (ROMS and WRF) are used to document the Peru Undercurrent (PUC) variability in the intraseasonal frequency band off Paita.

HCS161 - Seasonal to decadal variations of the macrobenthic biomass and diversity in the upper Peruvian continental margin influenced by the Oxygen Minimum Zone (1976 – 2005)

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Keywords: benthic communities, ENSO, Oxygen Minimum Zone, Peru margin,

Introduction- Large scale circulation patterns and high regional primary productivity in near-surface waters result in an intense oxygen minimum zone (OMZ; O_2 < 0.5 ml L^{-1}) that intersects the upper continental margin (50 – 600 m depth) off the coast of Peru. Oxygen concentrations have a strong influence on benthic communities in the continental shelf and upper slope, especially where high concentrations of organic matter deplete sedimentary oxygen levels. As a result, there is a strong bathymetric zonation of the macrobenthic communities (Arntz et al., 2006). Moreover, the influence of the less hypoxic Equatorial Undercurrent near the equator results in a latitudinal gradient of the macrobenthic biomass and diversity.
The subsurface oxygen content undergoes significant interannual variability driven by the ENSO cycle, with the OMZ deepening during El Niño (EN). In shallow sublittoral areas, macrobenthic biomass and diversity responses to EN vary in sign and intensity, according to latitude and the sedimentary environment (Tarazona et al., 1988, Gutiérrez et al., 2006). Temporal variability at other time-scales and the dynamics of the deeper sublittoral and bathyal macrobenthic communities is poorly known. For example, it is

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