



Coastal trapped waves on the continental slope of the Gulf of Guinea

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Currentmeter measurements have been carried out for three years on the continental slope of the Gulf of Guinea, near 7.5°S off the Angola coast. Currents on the slope (in a water depth of 1300 m) show a remarkable biweekly oscillation, bottom intensified, and with currents oriented nearly parallel to the isobaths. With a peak-to-peak amplitude reaching 20-30 cm/s at 30 meters above the bottom, this signal is the most energetic at sub-inertial frequencies. Simple linear topographic wave theories are compared to the observations. Topographic Rossby waves do not fit the data well, but a combination of coastal trapped waves with cross-slope mode 3 to 5 could be consistent with the observed currents. A three-dimensional $1/6^{\circ}$ model suggests the existence of modes trapped to the slope, although with lower amplitude than observed. A higher resolution model is being developed to study the dynamics of those oscillations and possible generation mechanisms.