Seychelles thermodynamic panel

What is the Seychelles-Chagos thermocline Ridge (SCTR)?
The Seychelles-Chagos Thermocline Ridge (SCTR) in the southwestern tropical Indian Ocean exhibits a prominent subsurface upwelling(Figure-1),which plays an important role in the ocean environment,including ocean heat content and ecosystem variability.

What drives the Seychelles-Chagos thermocline Ridge interannual variability?
Abstract: Remote processes,such as El Niño- Southern Oscillation (ENSO) and Indian Ocean Dipole (IOD),are primary drivers of the Seychelles-Chagos thermocline ridge (SCTR) interannual variability with respect to ocean temperature and salinity.

What is the Seychelles dome?
It has also been referred to as the Seychelles Dome or Thermocline Ridge of the Indian Ocean(Hermes and Reason 2008; Yokoi et al. 2008; Jayakumar et al. 2011). Because of the nutrient-rich water brought up by the upwelling,the SCTR is known to exhibit high biological productivity (Xie et al. 2002; Dilmahamod et al. 2016).

Why are annual and semiannual harmonics used in the Seychelles-Chagos Ridge model?
Annual and semiannual harmonics were fitted to the model data in order to help characterize this temporal structure of the variabilityof the Seychelles-Chagos ridge (not shown here for brevity [see Hermes and Reason,2007]) and compare well with previous work [e.g.,Masumuto and Meyers,1998; Rao and Sivakumar,2000; Wang et al.,2001].

How is the ocean circulation atop the Seychelles Plateau characterized?
The ocean circulation around and over the Seychelles Plateau (SP) is characterized using 35 months of temperature and velocity measurements along with a numerical model. The results here provide the first documented description of the ocean circulation atop the SP.

Where is the Seychelles tidal system located?
This model is the result of a least squares fit inverse solution of the Laplace tidal equations and the direct observational data from global tide gauges,satellite altimetry,and bathymetry. The model shows that the Seychelles is located ~1,000 km southwest of an M2 and K1 tidal amphidromic point.

The Seychelles-Chagos thermocline ridge (SCTR) in the southwest tropical Indian Ocean is important for regional climate, the Madden-Julian Oscillation, as well as upper-ocean nutrients and related phytoplankton and zooplankton densities.

In this study, we describe the dynamics of the sound scattering layers (SSLs), particularly those of fish and macroplankton communities in the epipelagic layer, in the Seychelles-Chagos Thermocline Ridge (SCTR) of

the southwest Indian Ocean using hydroacoustic data, net sampling, and oceanographic information.

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The Seychelles-Chagos Thermocline Ridge (SCTR, 5° 10°S, 50°-75°E) is an area that experiences year-round upwelling in the southwestern tropical Indian Ocean1"2. The climatological annual mean thermocline depth here is less than 70 m. This shallow thermocline is maintained by the upward Ekman pumping due to wind curl between

The biological variability of the upwelling region of the Seychelles-Chagos Thermocline Ridge (SCTR), both at surface and subsurface levels, is investigated using monthly outputs of a coupled biophysical model from 1958 to 2011.

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A prominent subsurface upwelling over the Seychelles-Chagos Thermocline Ridge (SCTR) in the southwestern tropical Indian Ocean is suppressed when downwelling Rossby waves propagate from the eastern Indian Ocean during the positive phase of the Indian Ocean Dipole (IOD) or El Niño periods.

The Seychelles-Chagos Thermocline Ridge (SCTR) in the southwestern tropical Indian Ocean exhibits a prominent subsurface upwelling (Figure-1), which plays an important role in the ocean environment, including ocean heat content

Abstract: Remote processes, such as El Niño- Southern Oscillation (ENSO) and Indian Ocean Dipole (IOD), are primary drivers of the Seychelles-Chagos thermocline ridge (SCTR) interannual variability with respect to ocean temperature and salinity. Although salinity variability in this region is understudied, previous studies have separated out ...

At seasonal scales, SSH variations in the open ocean are a result of the dynamic ocean response to changes in wind such as local Ekman pumping and propagating Rossby waves, and to the thermodynamic response to ...

The Seychelles-Chagos Thermocline Ridge (SCTR) in the southwestern tropical Indian Ocean exhibits a prominent subsurface upwelling (Figure-1), which plays an important role in the ...

[1] The Seychelles Dome refers to the shallow climatological thermocline in the southwestern Indian Ocean, where ocean wave dynamics efficiently affect sea surface temperature, allowing sea surface temperature anomalies to be predicted up to 1-2 years in advance. Accurate reproduction of the dome by ocean-atmosphere coupled general ...

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An annual and semiannual signal is present in the depth of the model thermocline. The model results suggest that SWTIO upwelling is focused in the west during austral spring and summer and forms a zonally elongated ridge during austral autumn and winter, termed here the Seychelles-Chagos thermocline ridge.

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