

## Interannual variations of the sea surface temperature above the Seychelles Dome

TOZUKA, Tomoki<sup>1\*</sup>, Takaaki Yokoi<sup>2</sup>, YAMAGATA, Toshio<sup>1</sup>

<sup>1</sup>The University of Tokyo, <sup>2</sup>AIST

The interannual variations of the sea surface temperature (SST) above the Seychelles Dome (SD) are investigated using outputs from an ocean general circulation model. The SST becomes anomalously warm (cool) when the SD is weak (strong). In contrast to the seasonal variation, the vertical diffusion plays the most important role and causes anomalous warming (cooling). This warming (cooling) is due to the anomalously warm (cold) water below the mixed layer as a result of the deeper (shallower) thermocline in response to ocean dynamics. Also, the cooling by the vertical diffusion becomes less (more) efficient, because the mixed layer is anomalously thick (thin). The horizontal advection contributes to the anomalous warming (cooling) due to the anomalous southward (northward) Ekman heat transport. On the other hand, the anomalous surface heat flux tends to cool (warm) the mixed layer, because the warming of the mixed layer by the shortwave radiation becomes less (more) efficient due to the anomalously thick (thin) mixed layer.

Keywords: Tropical Indian Ocean, Oceanic upwelling dome, Interannual variation, Ocean general circulation model