SSH variations tend to be reflected in thermocline depth variations of opposite sign. Thus the Costa Rica Dome’s positive thermocline anomalies generally correspond to negative SSH anomalies, while the Tehuantepec Bowl tends to have positive SSH anomalies.

The fall/spring variations in the trough-ridge-trough thermocline structure correspond to the seasonal march of the ITCZ, which modulates the wind stress curl patterns.

Further investigation will include the use of satellite and other data products to identify the Costa Rica Dome’s formation and movement, and its influence on the thermocline. Ultimately this study will also involve analysis of the ITCZ freshwater input, regional heat budget, surface buoyancy fluxes and their influence on the coupled ocean-atmosphere circulation patterns.