horizontal advection, the shear is more distributed within the mixed layer (see Fig. 9). This strong vertical shear in a region of no vertical stratification arises from strong supporting horizontal gradients.

8. Oceanic variability during the Intermonsoons

The Intermonsoon seasons, here defined as running from February 15 through June 1 and a shorter season between September 15 and November 1, are similar in their characteristics of surface forcing, and quite different from either monsoon season. They are marked by light winds and strong sea-surface heating. The deployment of the moorings from October 1994 through October 1995 only represented part of the Fall Intermonsoon at either end, so here we focus on the Spring Intermonsoon of February 15 through June 1, 1995. The majority of the period is characterized by low winds and a high buoyancy flux due to a high net heat flux into the ocean. There are two periods of moderate wind stress and greatly reduced net heating of the ocean, in the first few weeks of March and in the first few days of April. Both are associated primarily with increased losses in the latent heat flux. In mid-May, there is a false start to the SW Monsoon, an increase in the wind stress from the southwesterly direction and a coincident reduction in the net heat flux, which stops abruptly on May 19.

8.1. Temperature and salinity

The Intermonsoon is a period of strong net heat gain, as seen clearly in the steady rise of near-surface temperatures (Fig. 28). The low winds also allow energetic diurnal cycling of the surface (0.43 m) temperature. This restratification often remains shallow, as the 5-m temperature record only shows diurnal variability when there is increased wind stress. The period begins with nearly isothermal temperatures in the upper 100 m, a result of the recent NE Monsoon. During February, with very weak winds and strong net surface heating, the diurnal signal is very pronounced, and warming raises the 0.43- and 5-m depth temperatures, while deeper temperatures remain unaffected. The diurnal cycle of heating creates very deep mixed layers at night, as the surface and subsurface temperatures have not been given much chance to diverge, although as February turns to March the surface temperatures increase enough that the night-time cooling cannot penetrate deeper than about 20 m. The moderate winds and moderate cooling of the first 2 weeks in March bring suppressed diurnal variations in temperature, and a night-time deepening of the mixed layer to about 60 m. From mid-March through mid-May strong surface heating and very light winds accompany a strong rise in the sea-surface temperature. Penetrative radiation is able to warm the region below the shallow mixed layer and increases the temperatures at 20 and 40 m. Dickey et al. (1998) report up to 75 $\mathrm{W\,m^{-2}}$ of radiative flux at the base of the mixed layer (0.1°C) during the Spring Intermonsoon. A small wind event combined with a shutdown of the buoyancy flux just after the first of April can only moderately deepen the mixed layer due to the stratification that has been built up, in contrast to the March event. The false start to the SW Monsoon in May leads to a suppression of the strength of the diurnal cycle and some deepening of the mixed layer, but Spring Intermonsoon surface forcing returns through the end of May. There are two events, one at the end of March and the other at the beginning of May, where the subsurface temperatures show some lower frequency variability, not connected to surface processes.

The salinity record is generally consistent with the surface forcing, which is strongly evaporative. The diurnal surface salinity variations of about 0.05 psu at the beginning and at the end of May are particularly striking, and result from the action of strong evaporative forcing (the latent heat flux in May has an average loss of 114 $\mathrm{W\,m^{-2}}$, for an evaporative flux of 3.9 $\mathrm{mm\,day^{-1}}$) acting on a very shallow daytime mixed layer. The salinities at 35 m depth and shallower increase through the period, while deeper salinities remain more constant. The subsurface salinities have the same patchiness as seen in the two monsoon records, as well as some of the low-frequency variability seen in the Intermonsoon subsurface temperature