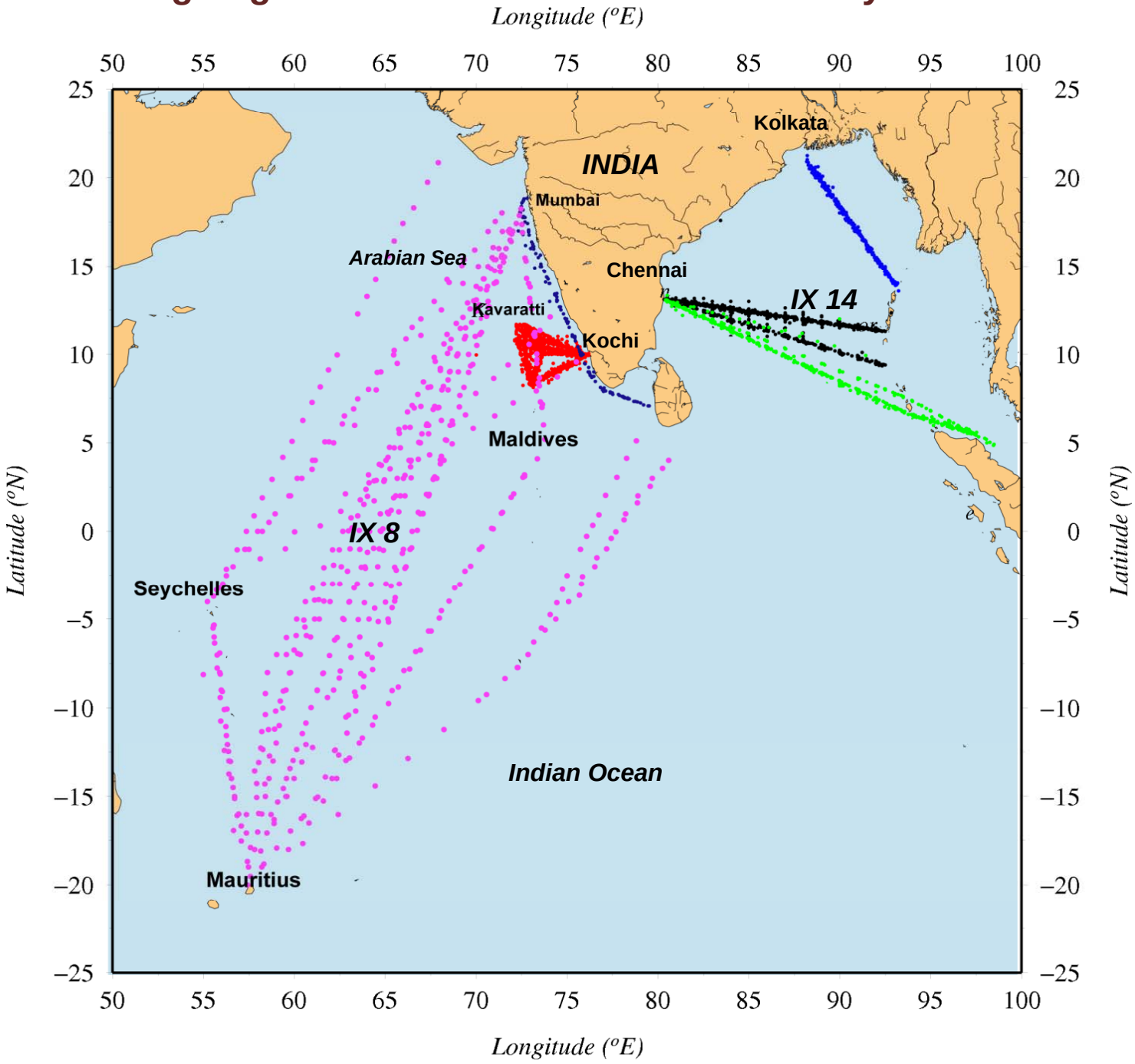
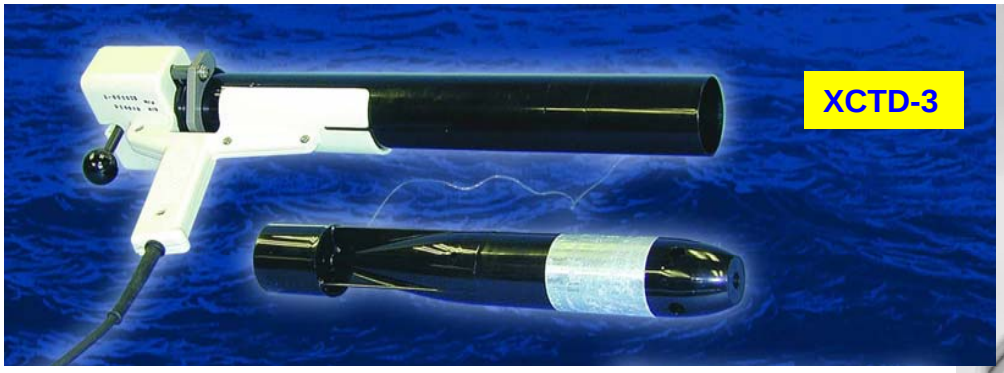
Ongoing XBT / XCTD transects executed by India



XBT / XCTD Instrumentation



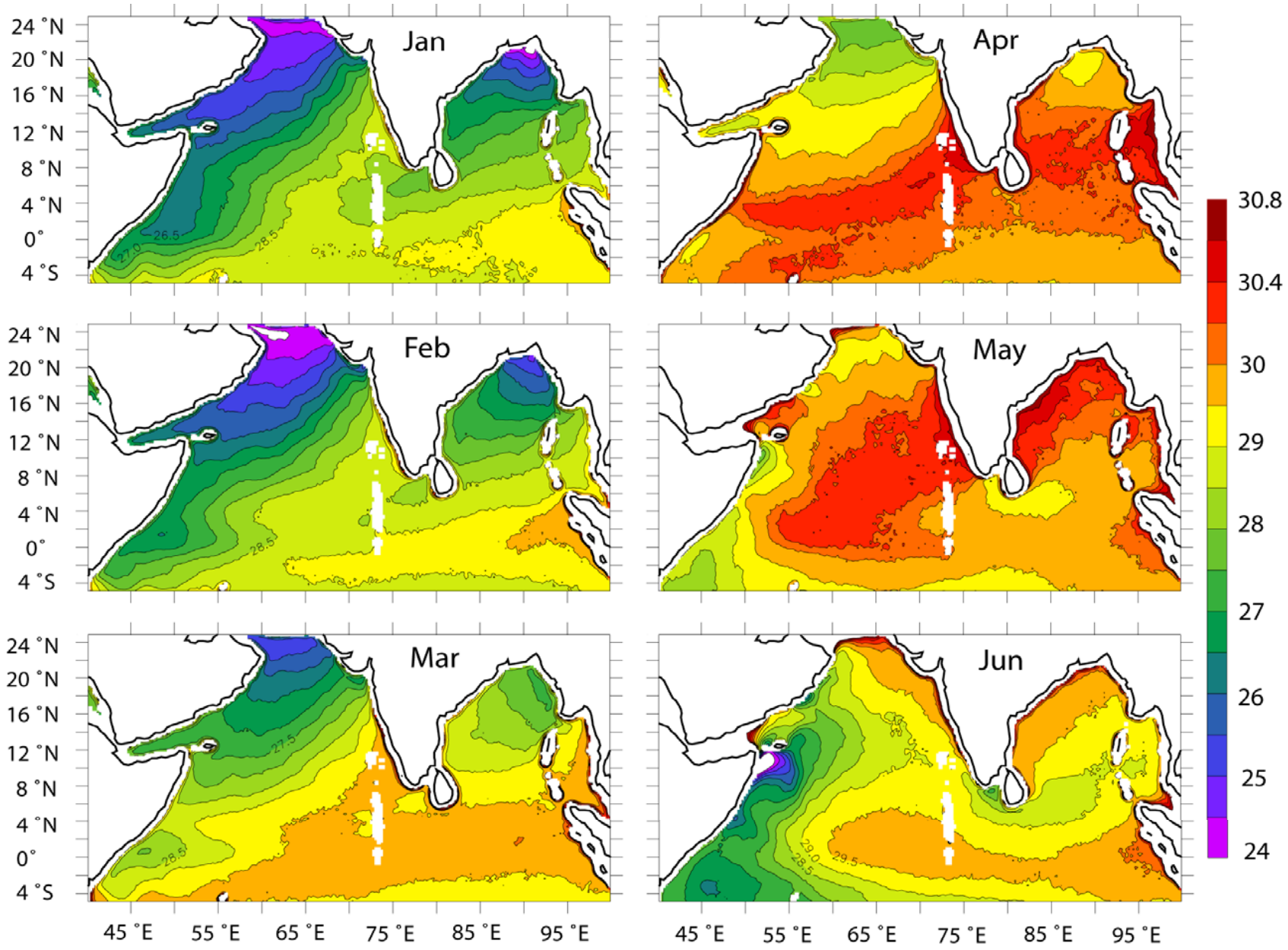
T-7 XBT probe

XBT Data Acquisition System

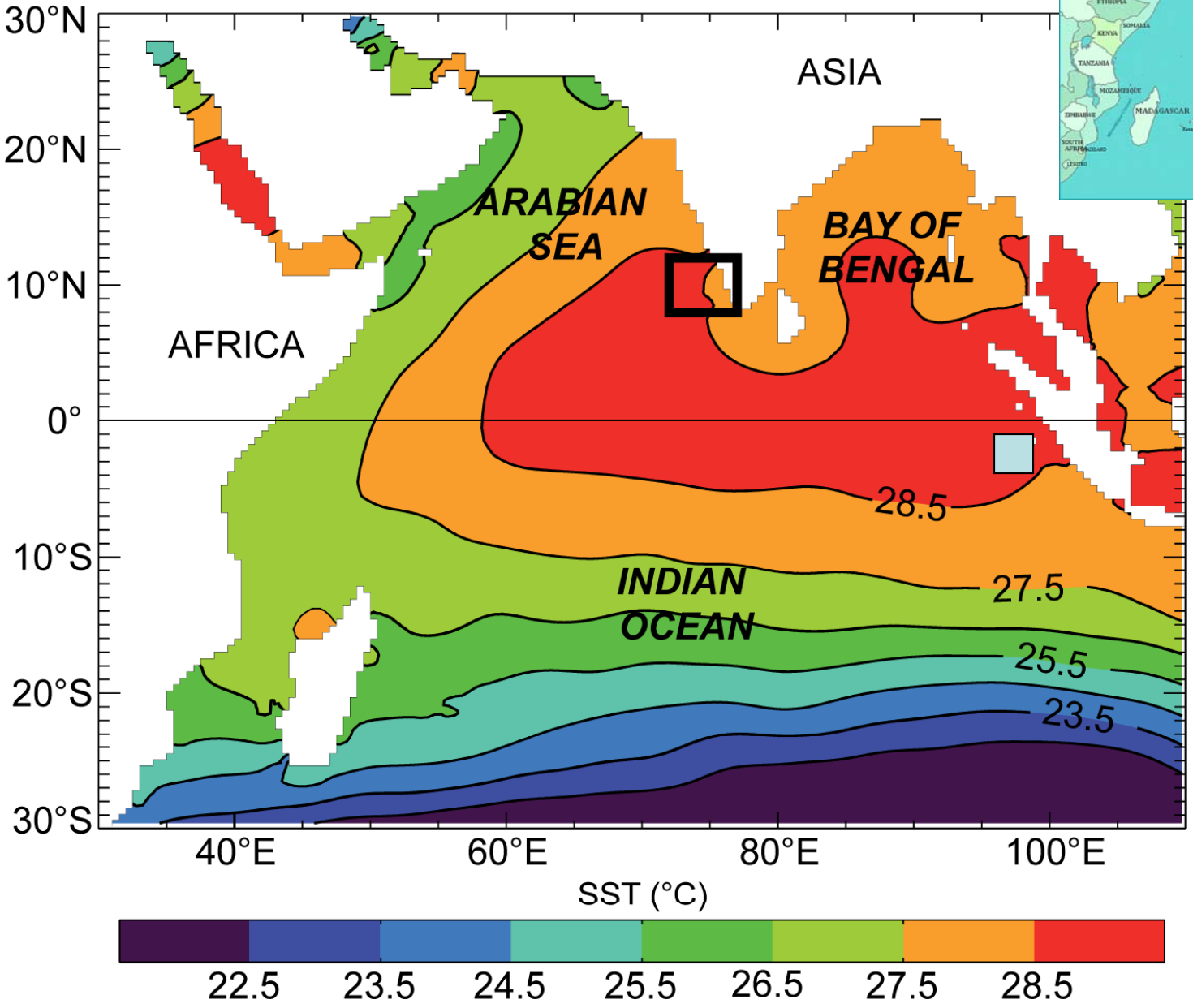
XBT Launching

South Eastern Arabian Sea (SEAS)

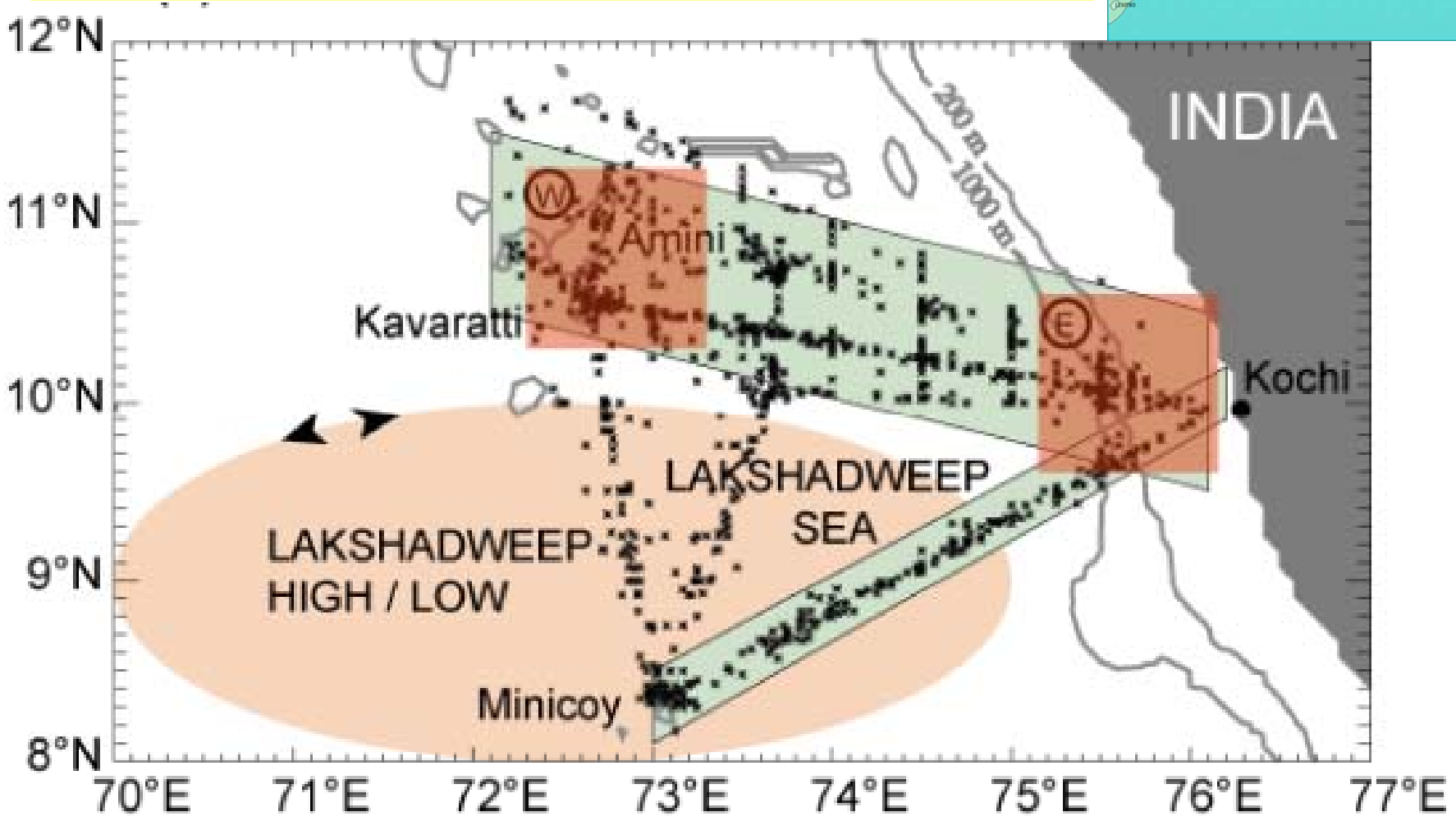
Evolution of Climatolological SST (Jan – June)



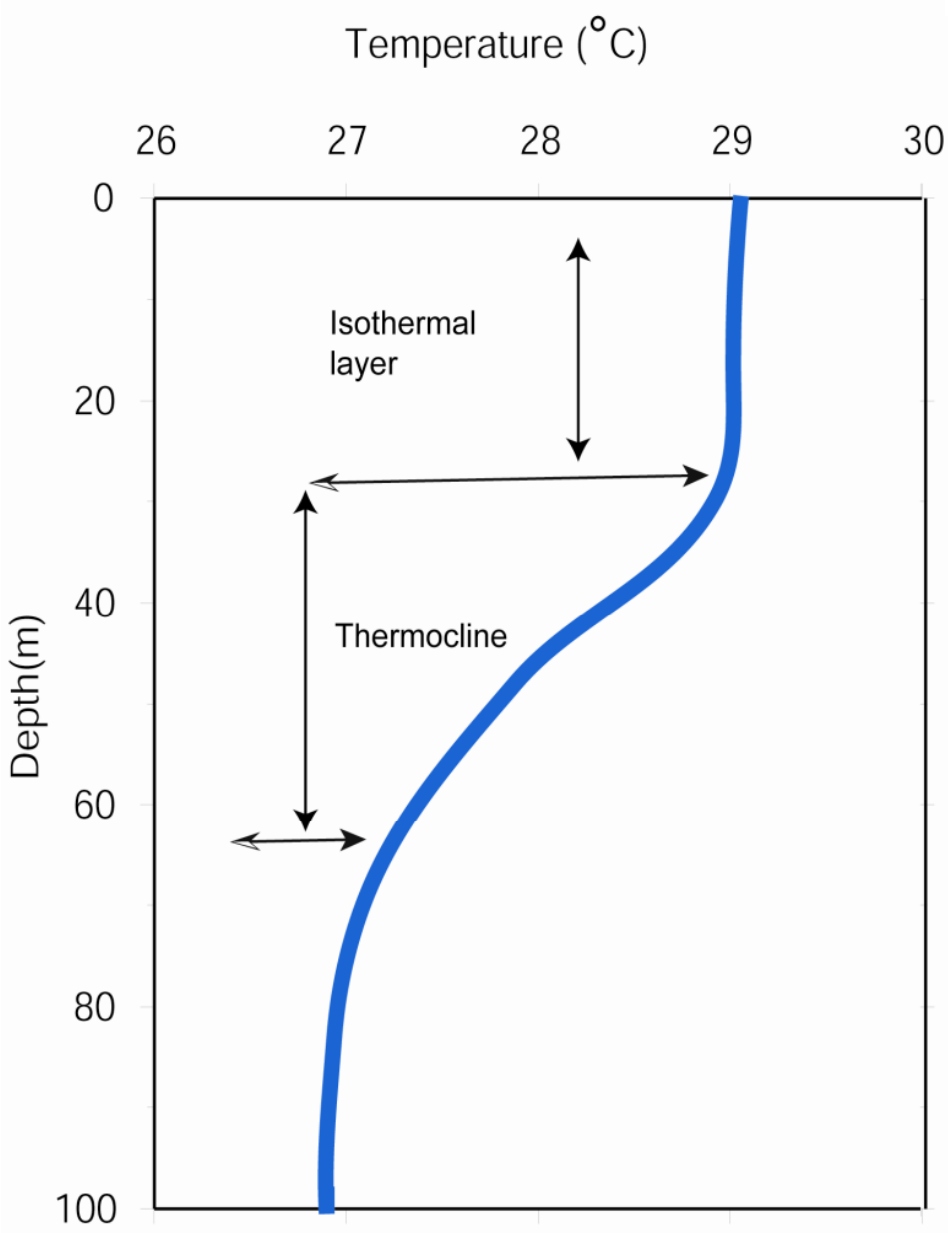
Indian Ocean warm pool

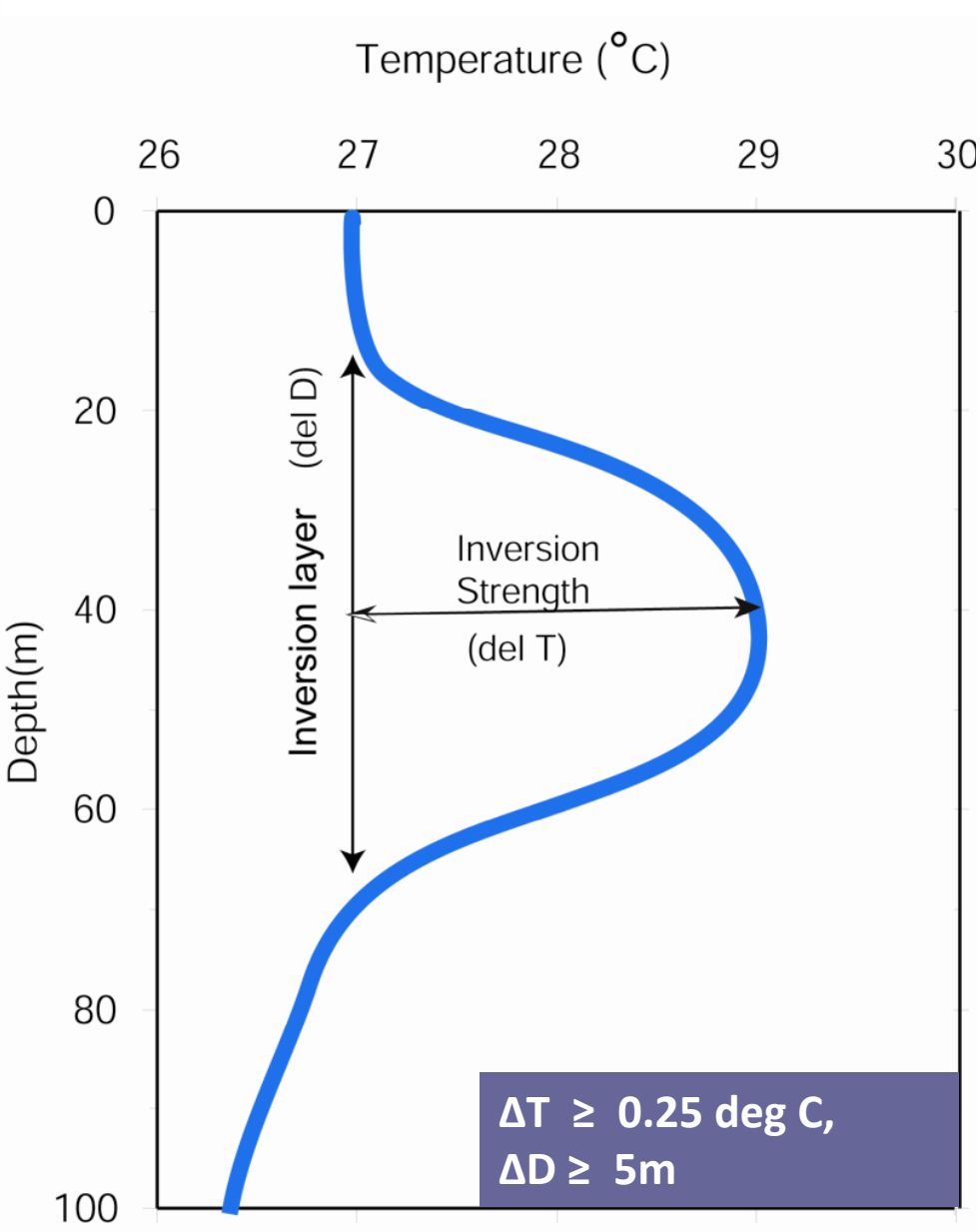


Distribution of XBT / XCTD stations during 2002 - 2011



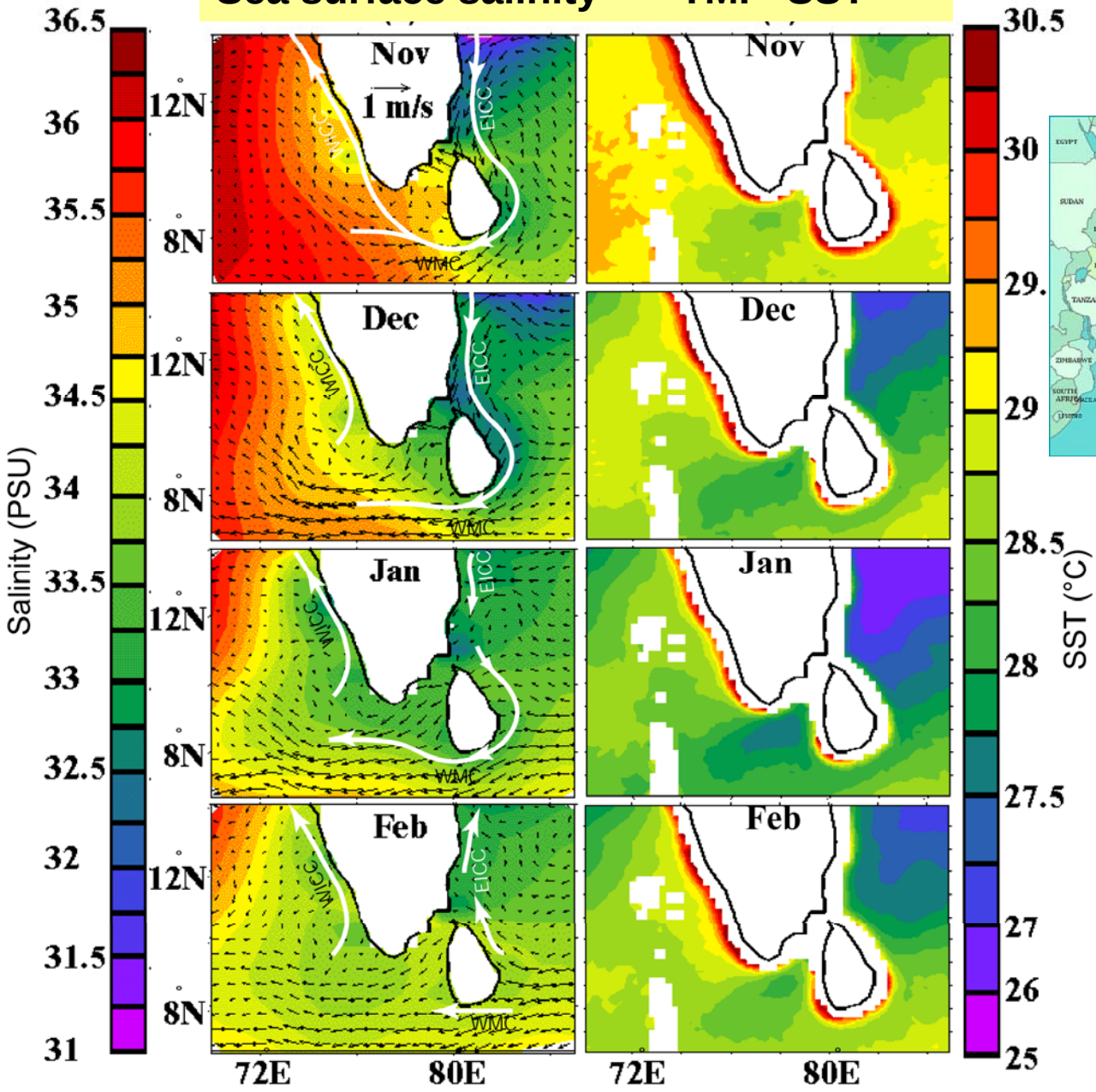
Thermal Inversion



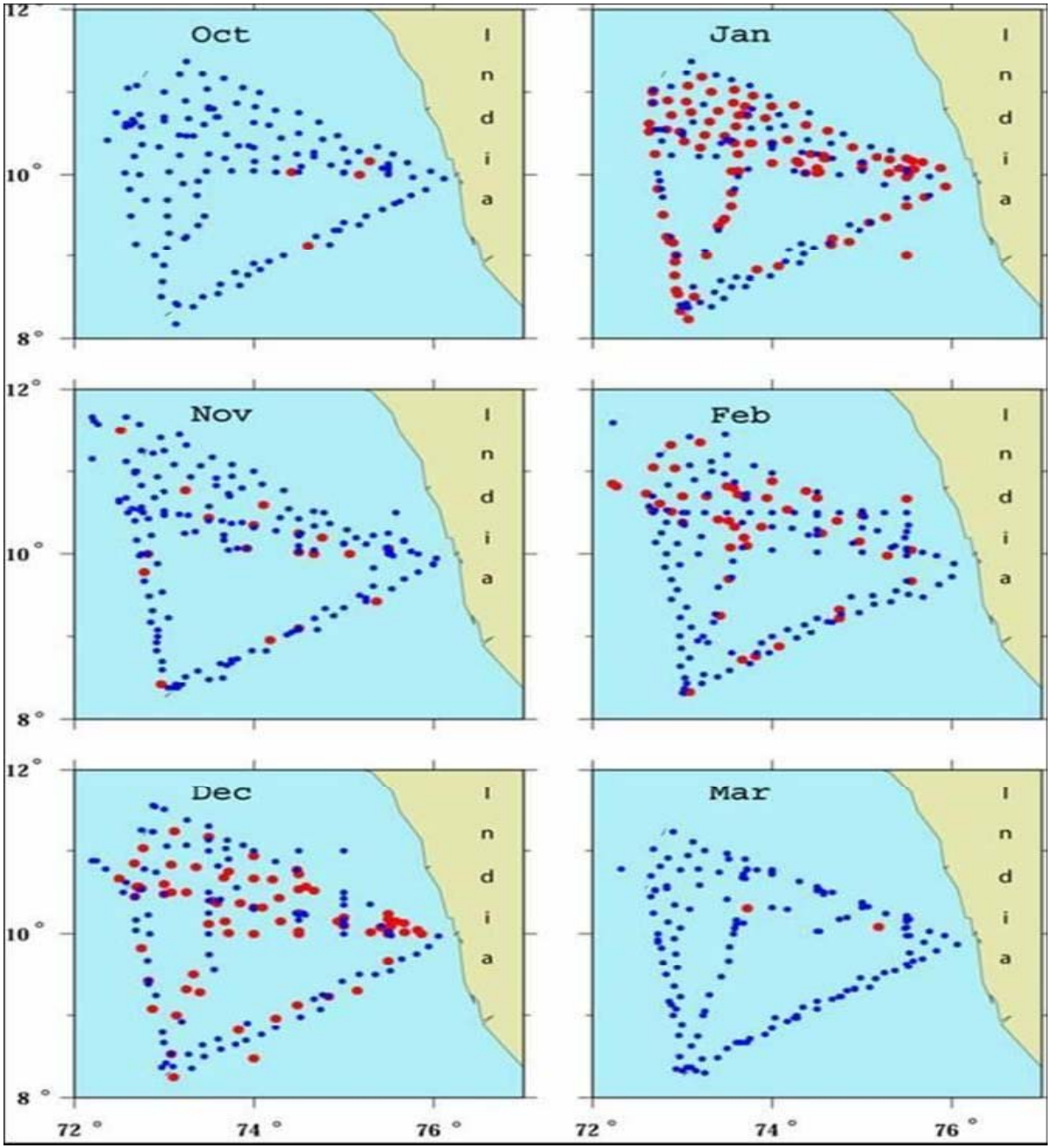


Monthly mean climatology of

Sea surface salinity **TMI - SST**

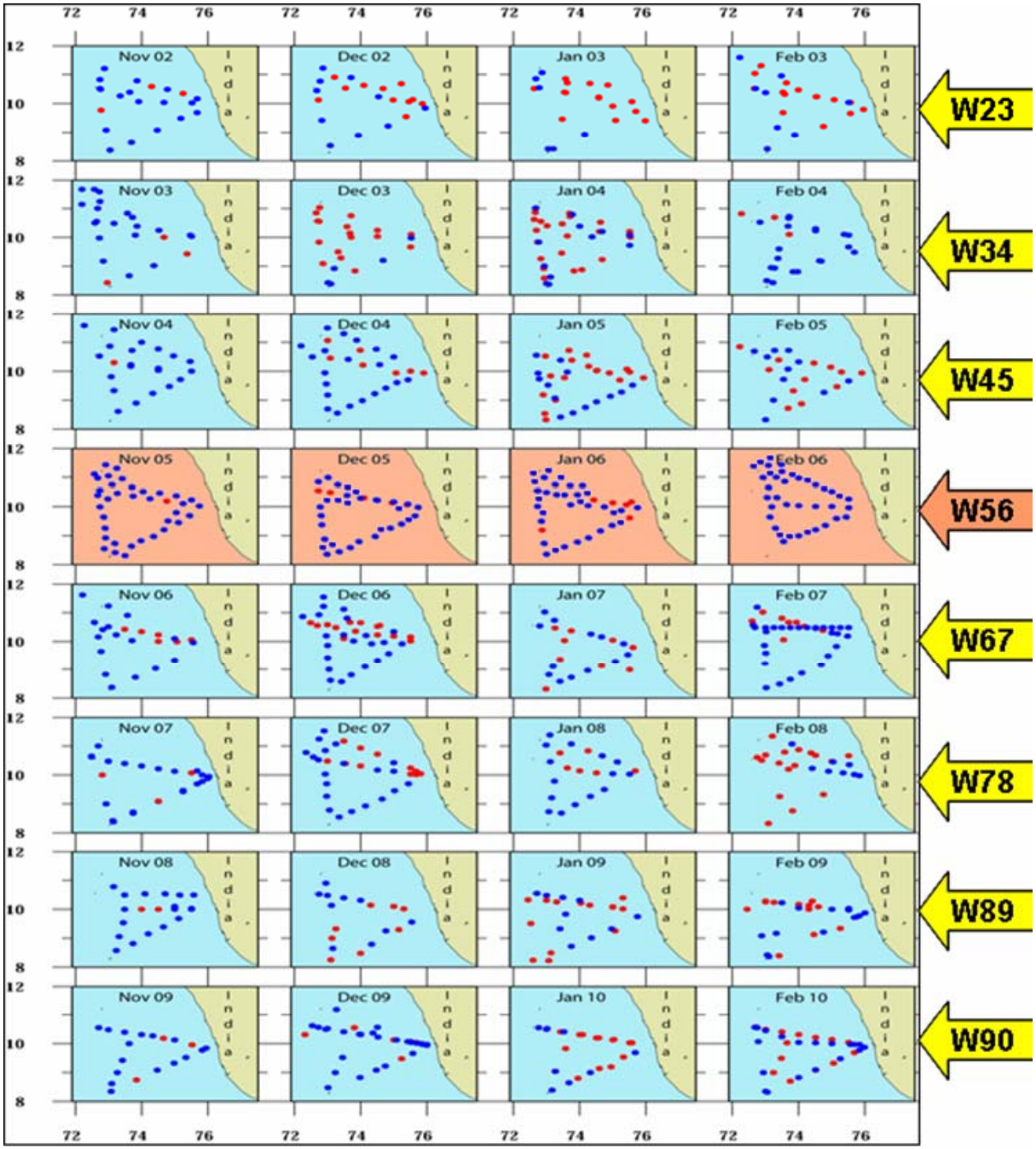


Evolution of Thermal Inversions (2002-2011) in the SEAS



XBT stations with Inversions

XBT stations without Inversions



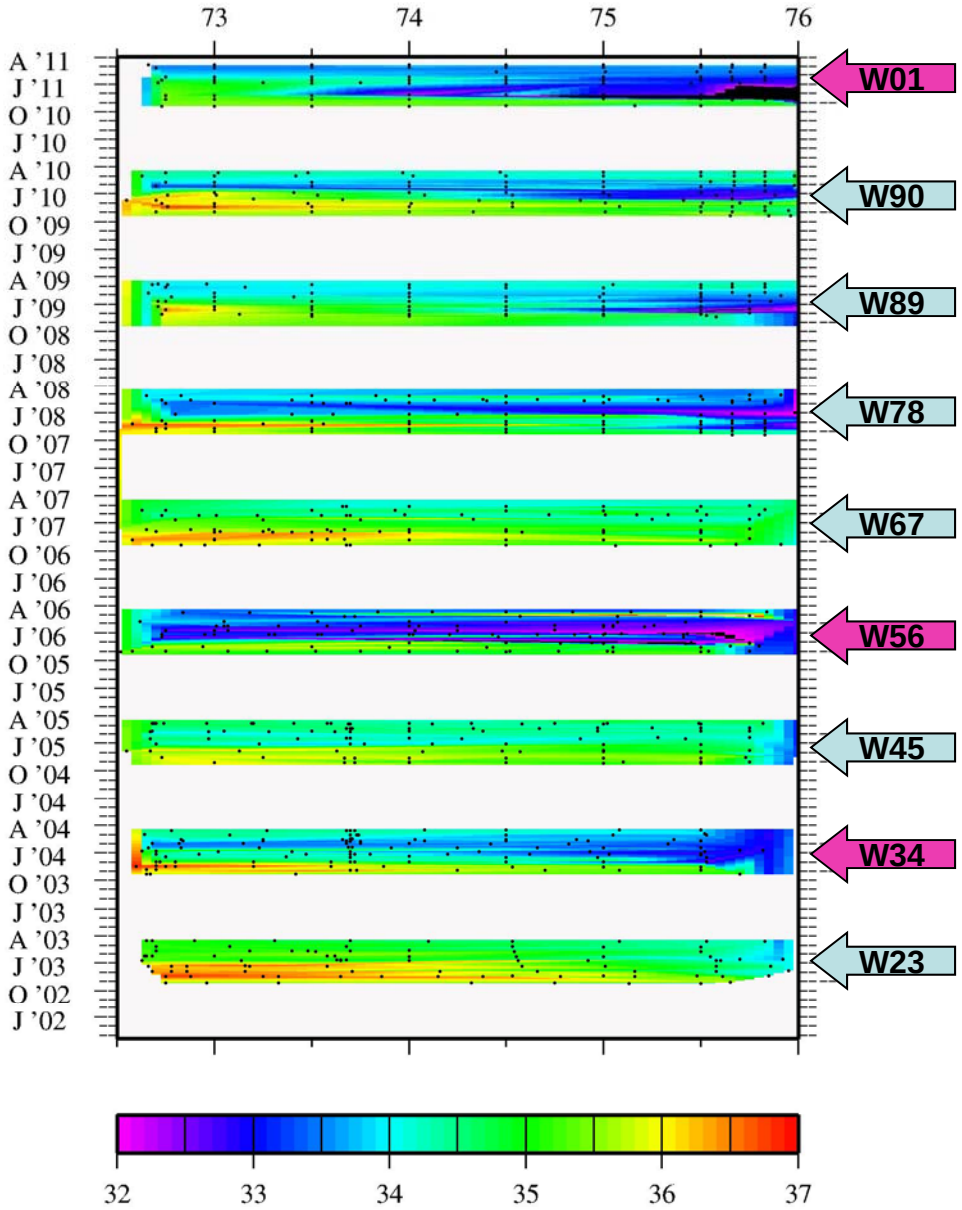
Inter annual variation of thermal inversions

Winter = Nov, Dec, Jan & Feb

XBT stations with Inversions

XBT stations without Inversions

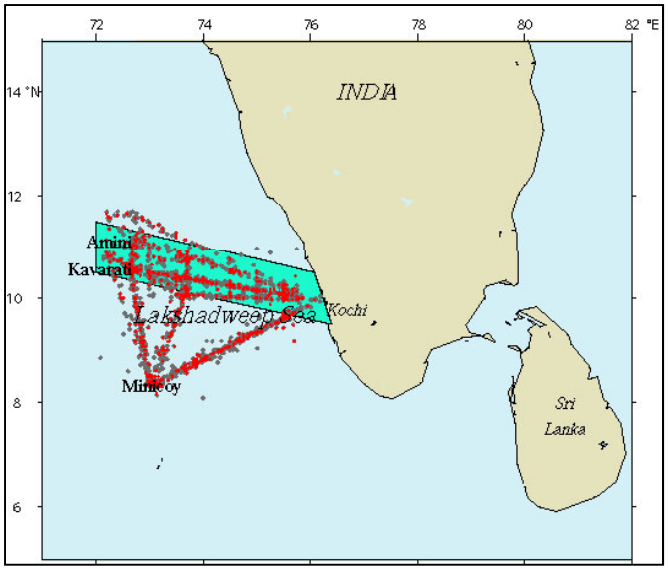
Hovmuller plot of SSS along the shaded strip during winters from 2002 - 2011



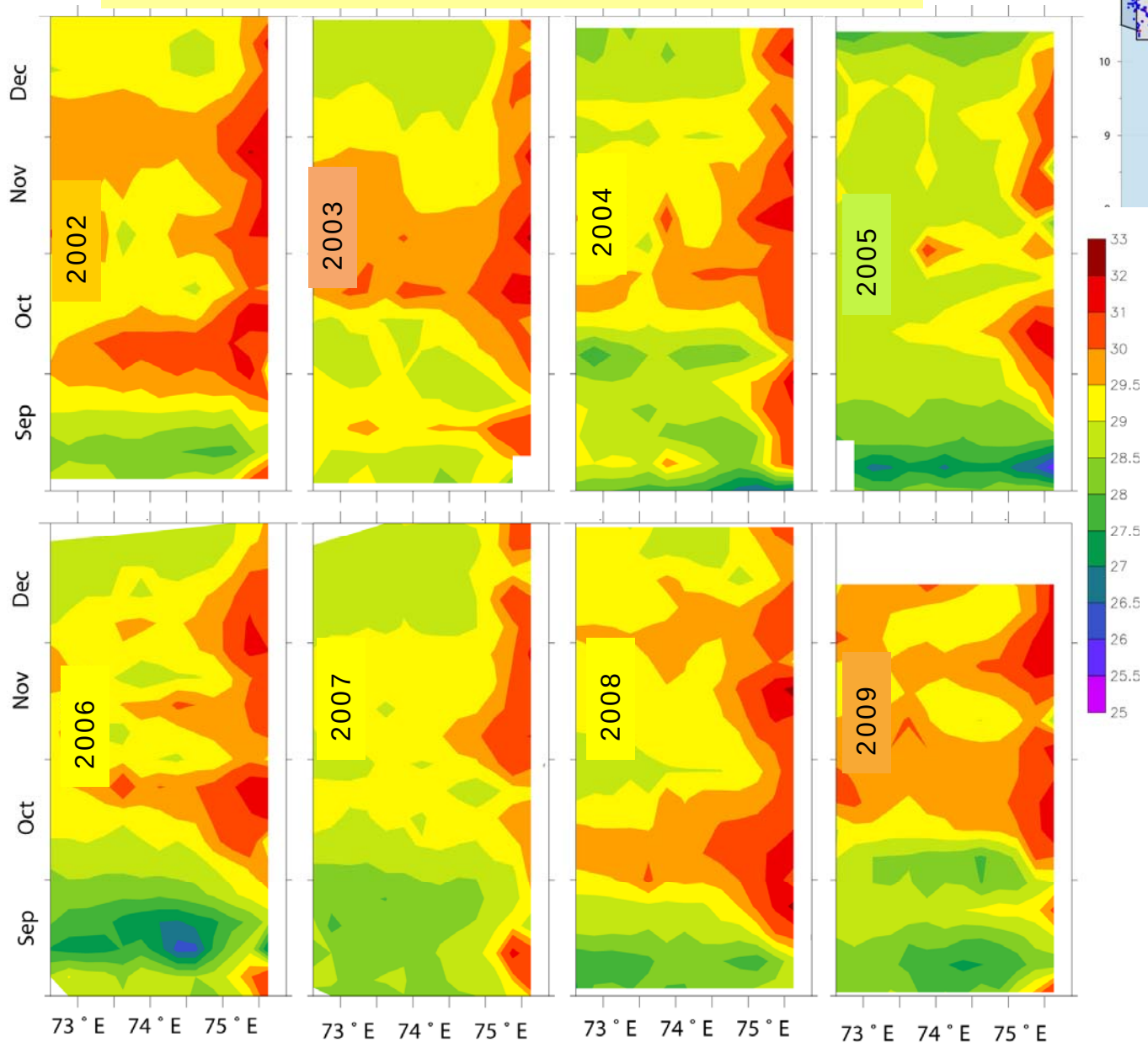
SSS data are collected at 15 day Intervals since May 2002.

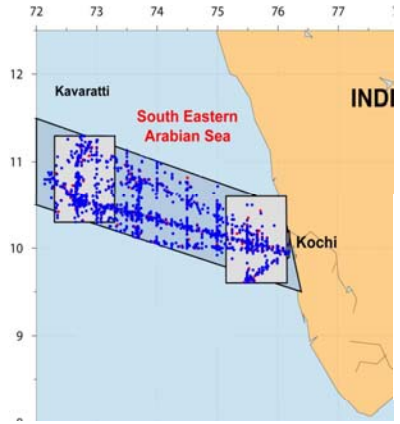
Data collection is continuing…..

Winter: Nov, Dec, Jan, Feb

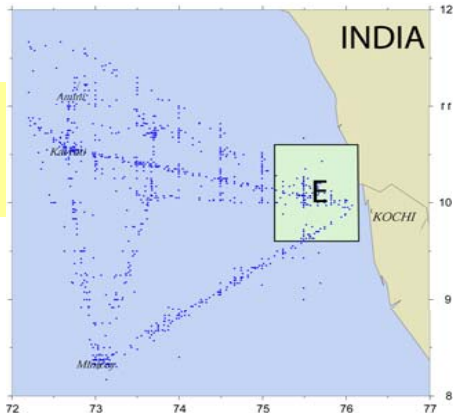


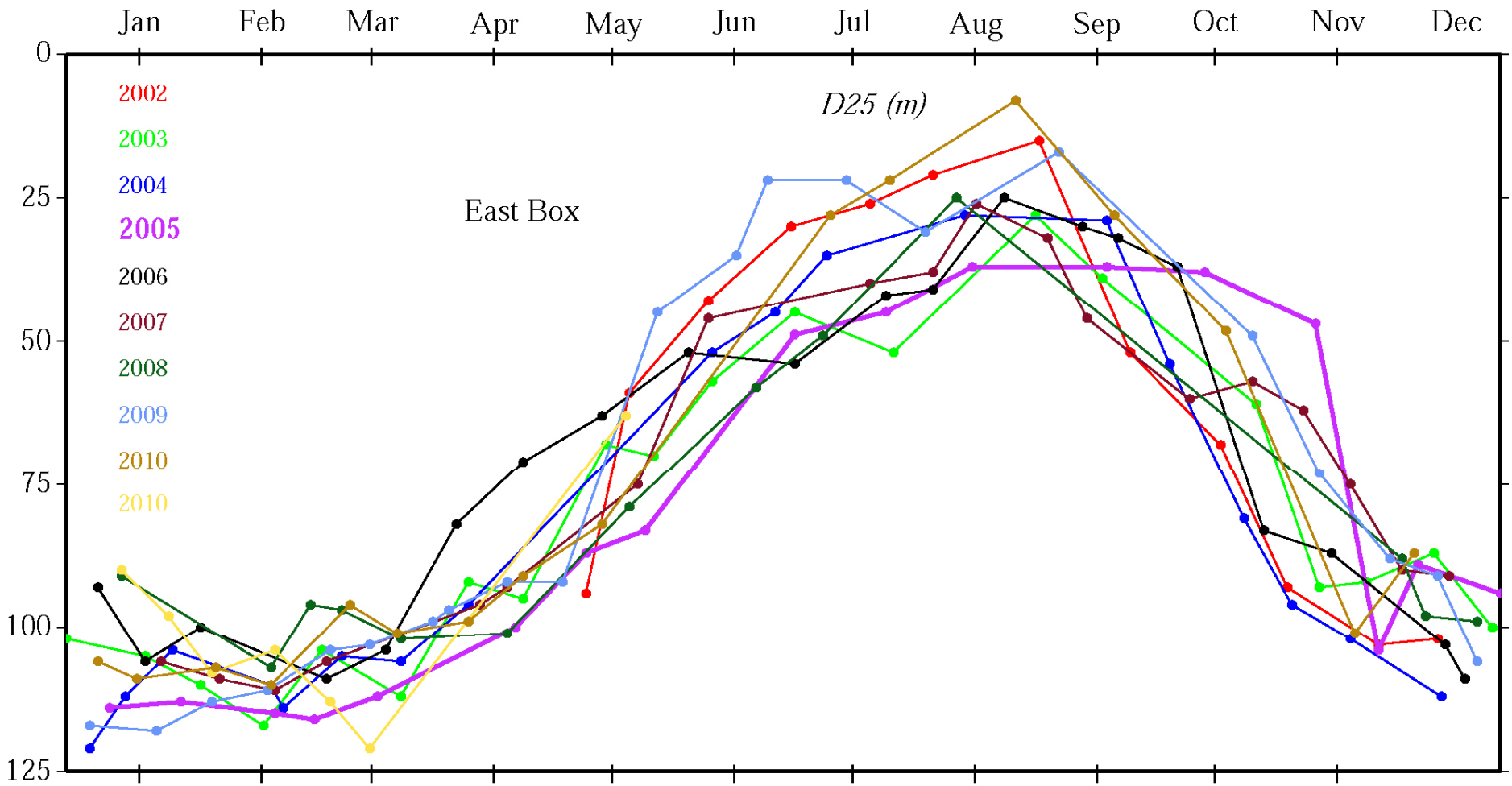
Hovmoller plot of TMI SST along the XBT transect during 2002 - 2009



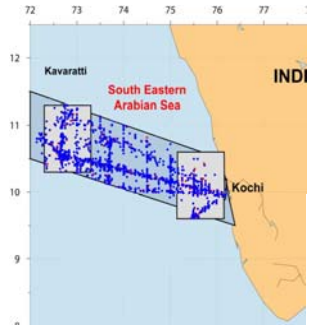


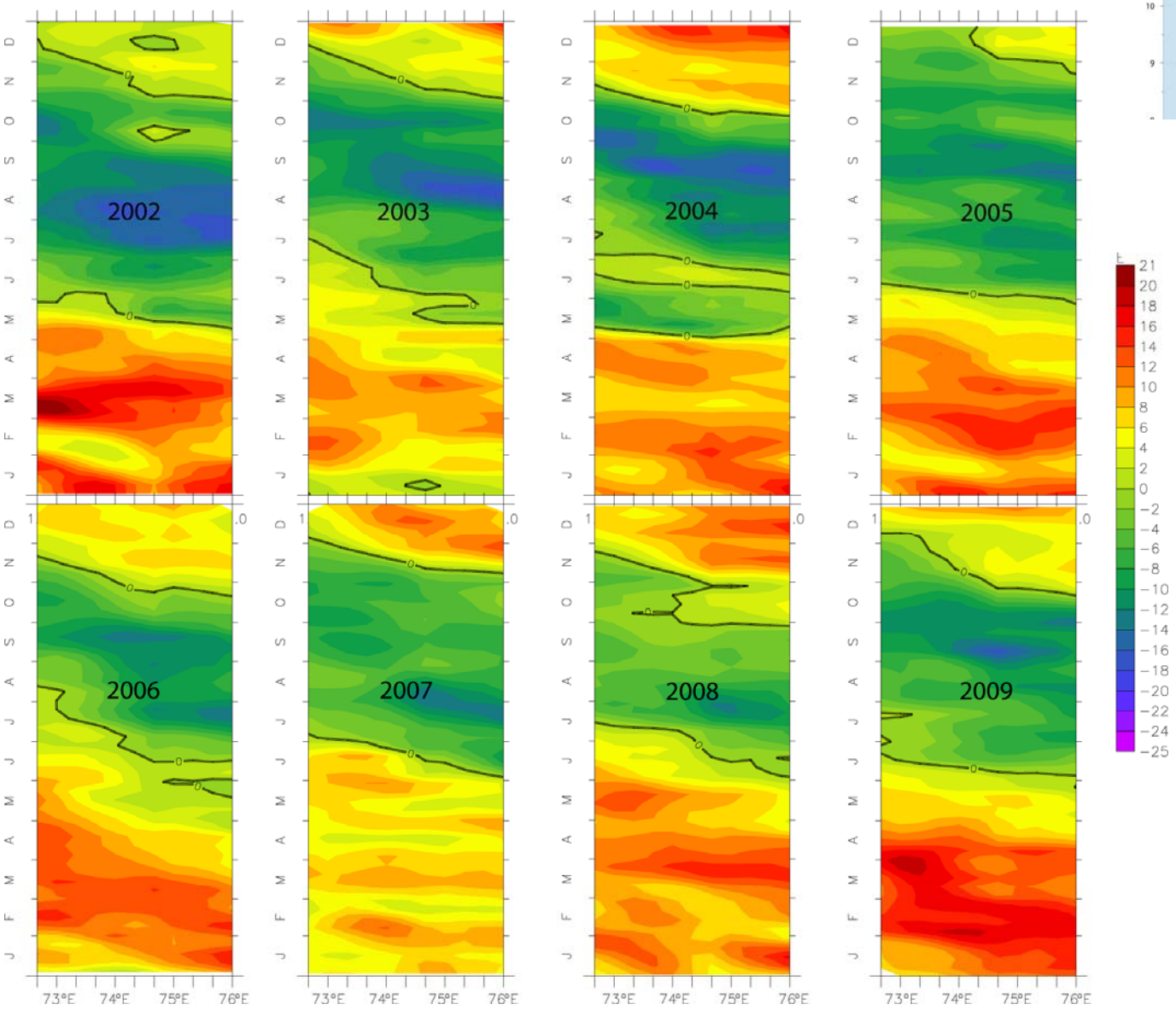
Annual variability of thermocline (D25) depth for the east box during 2002 - 2011

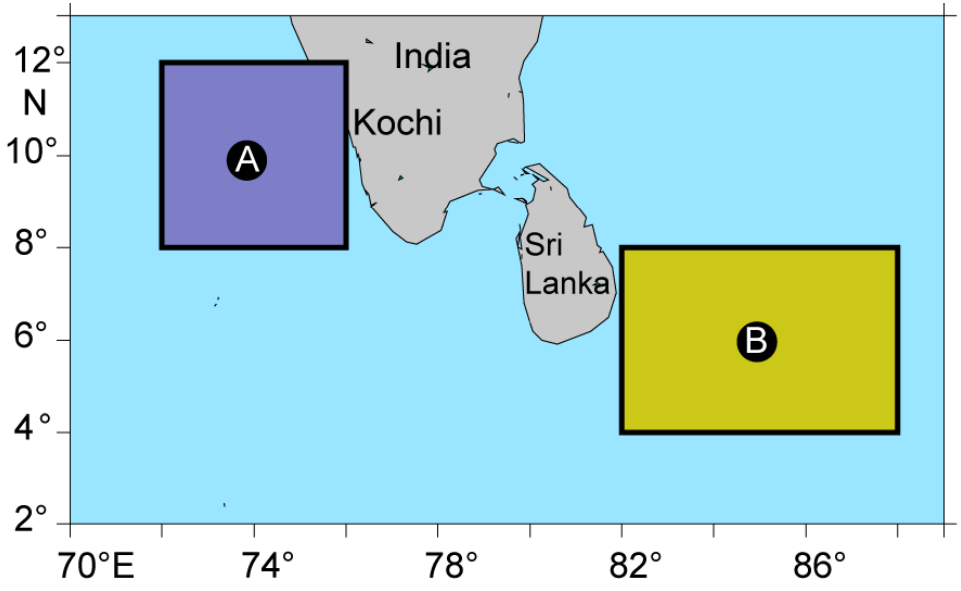




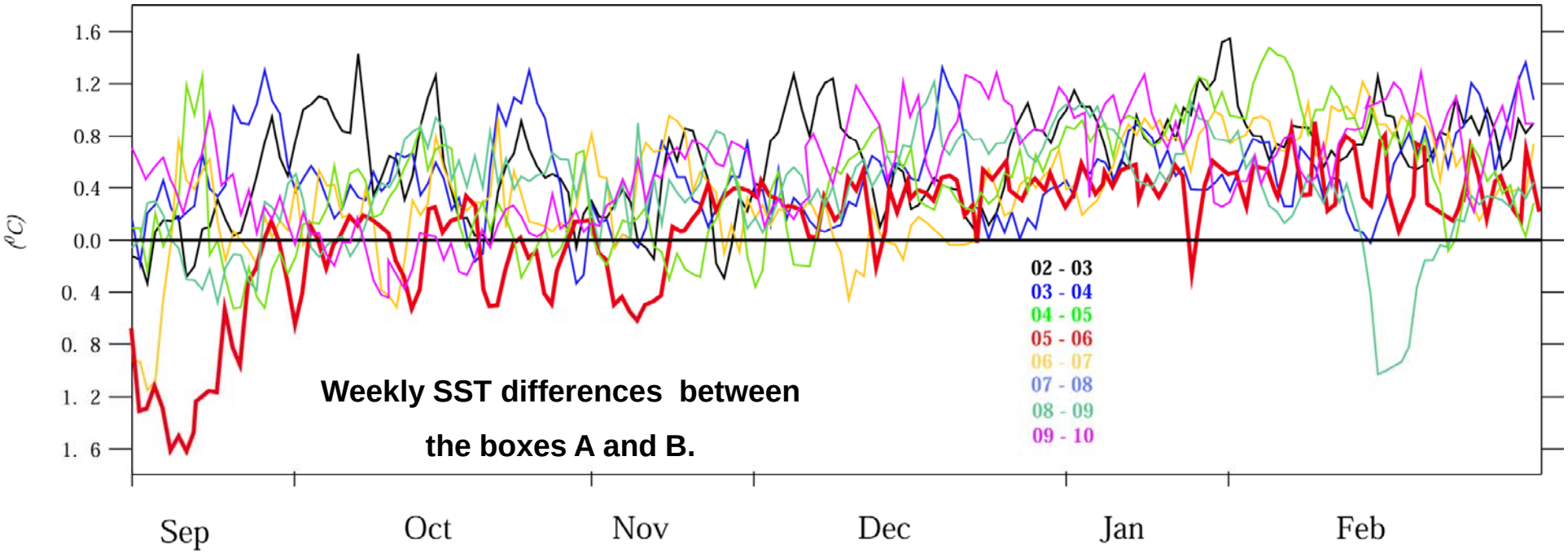
T/P SSH anomalies along the shaded strip during 2002-2009





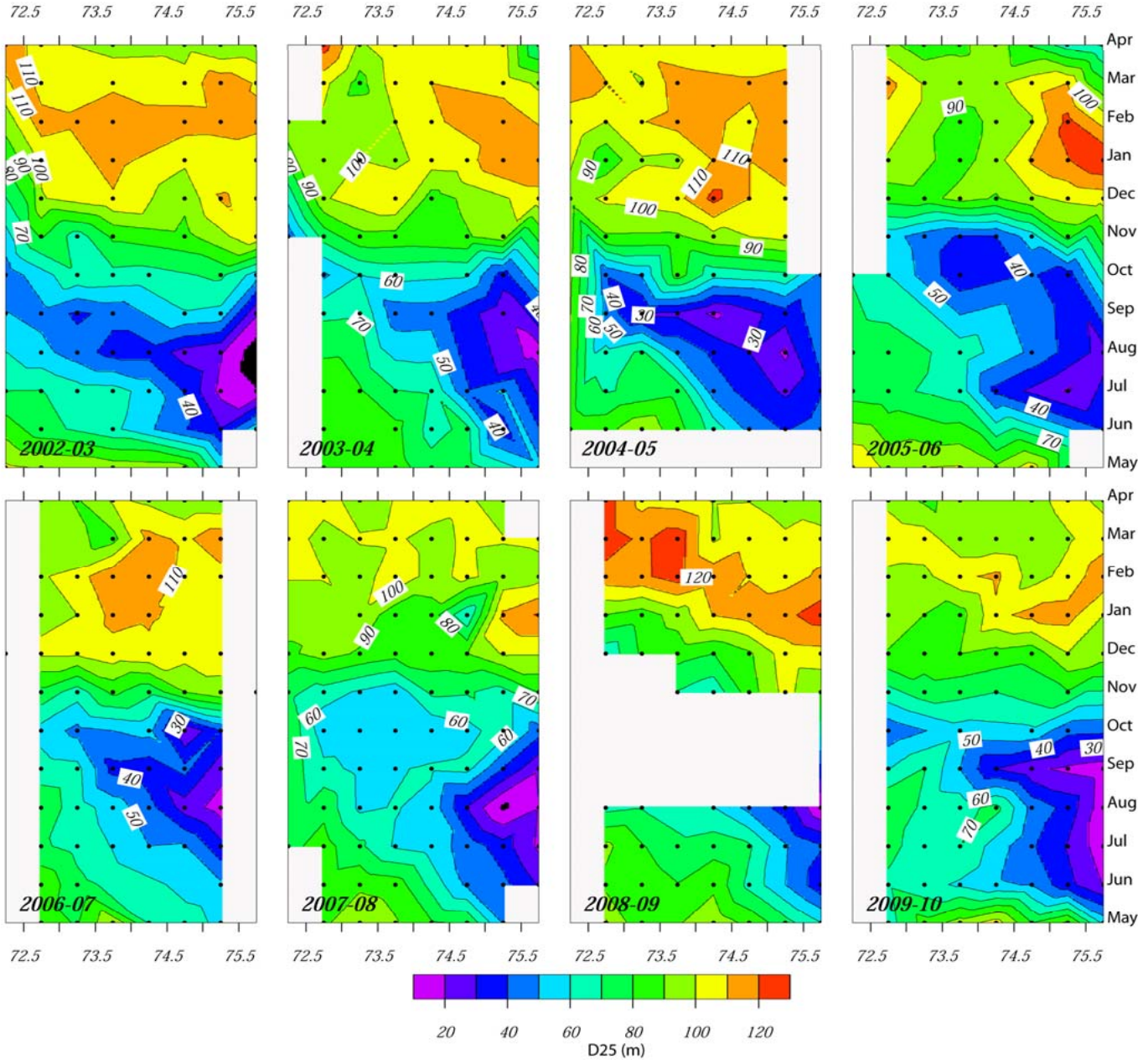


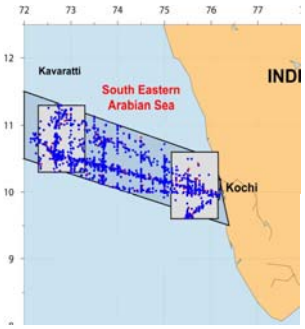
Role of SST gradient between the Bay of Bengal and SEAS.



Interannual Variability

Evolution of D25 from May 2002 to April 2010

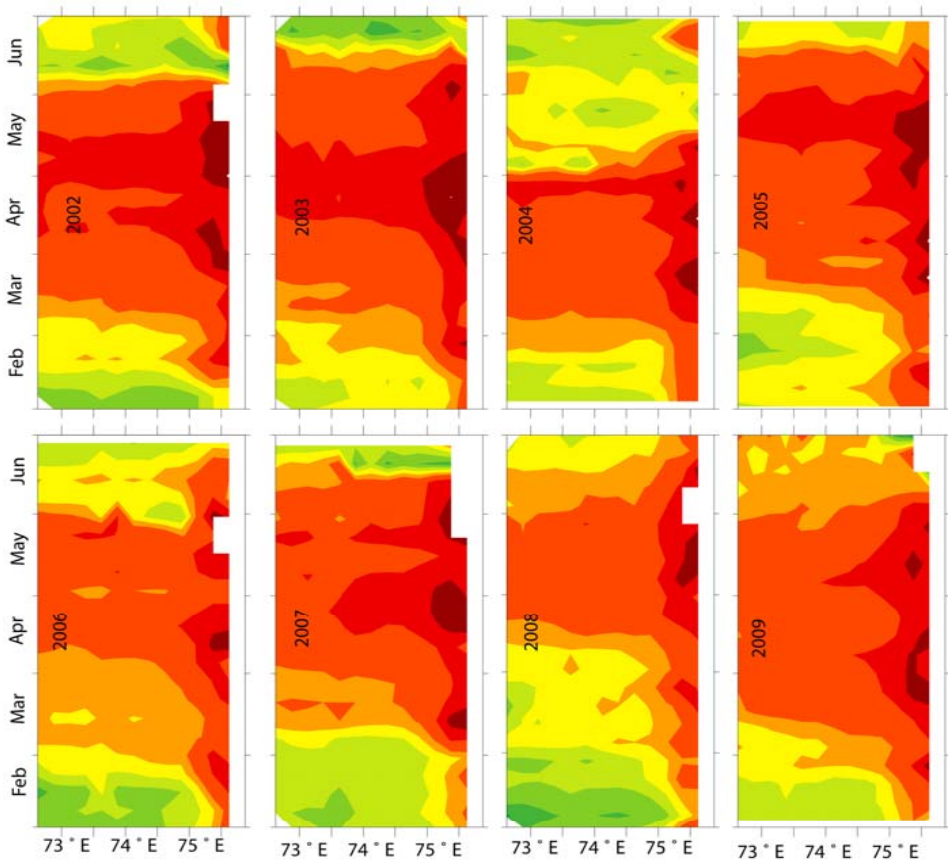


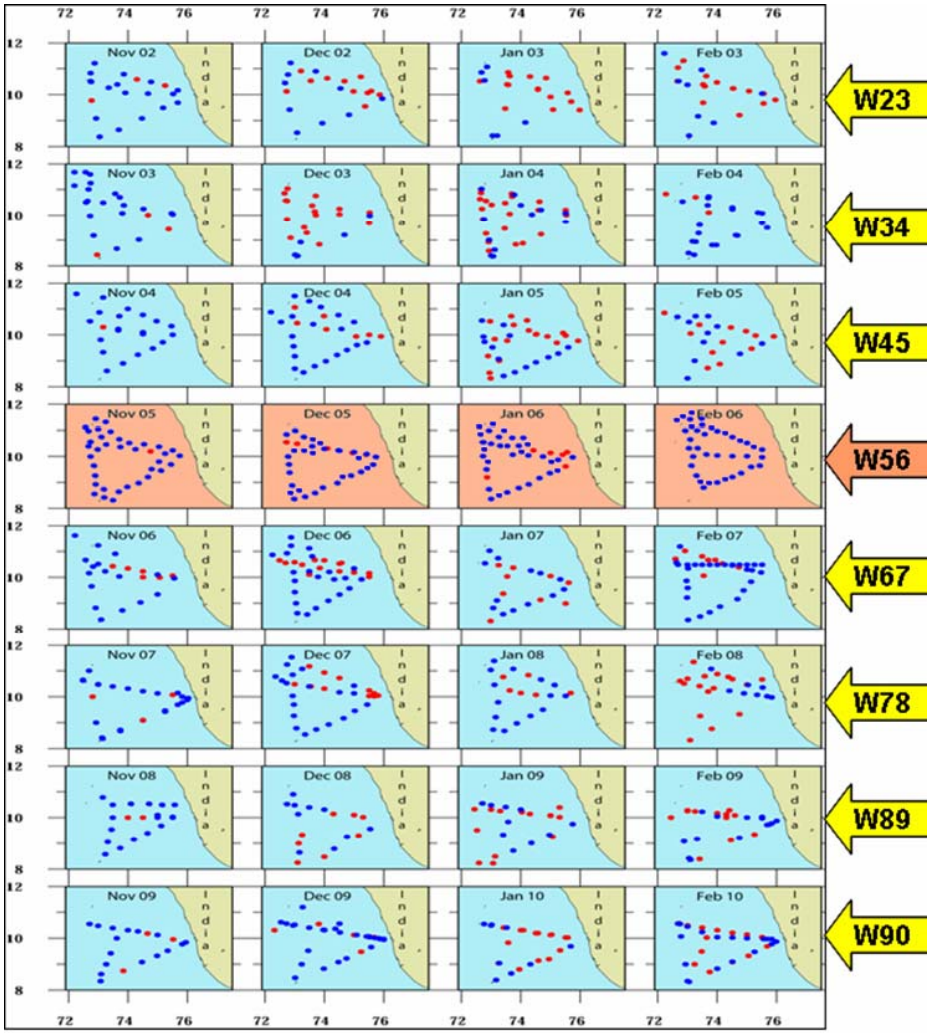


Summary

- **Occurrence of thermal inversions during winter is a well known phenomenon in SEAS.**
- **Using 2002 – 2010 XBT and SSS data examined the inter-annual variability of thermal inversions in the SEAS.**
- **In spite of strong Haline Stratification why few inversions occurred during W56 in the SEAS??**
- **Governing mechanism responsible for the anomalous events are examined.**
- **Highlighted the importance of secondary warming & SST gradient between SEAS and intruding waters from the Bay of Bengal.**


THANK YOU

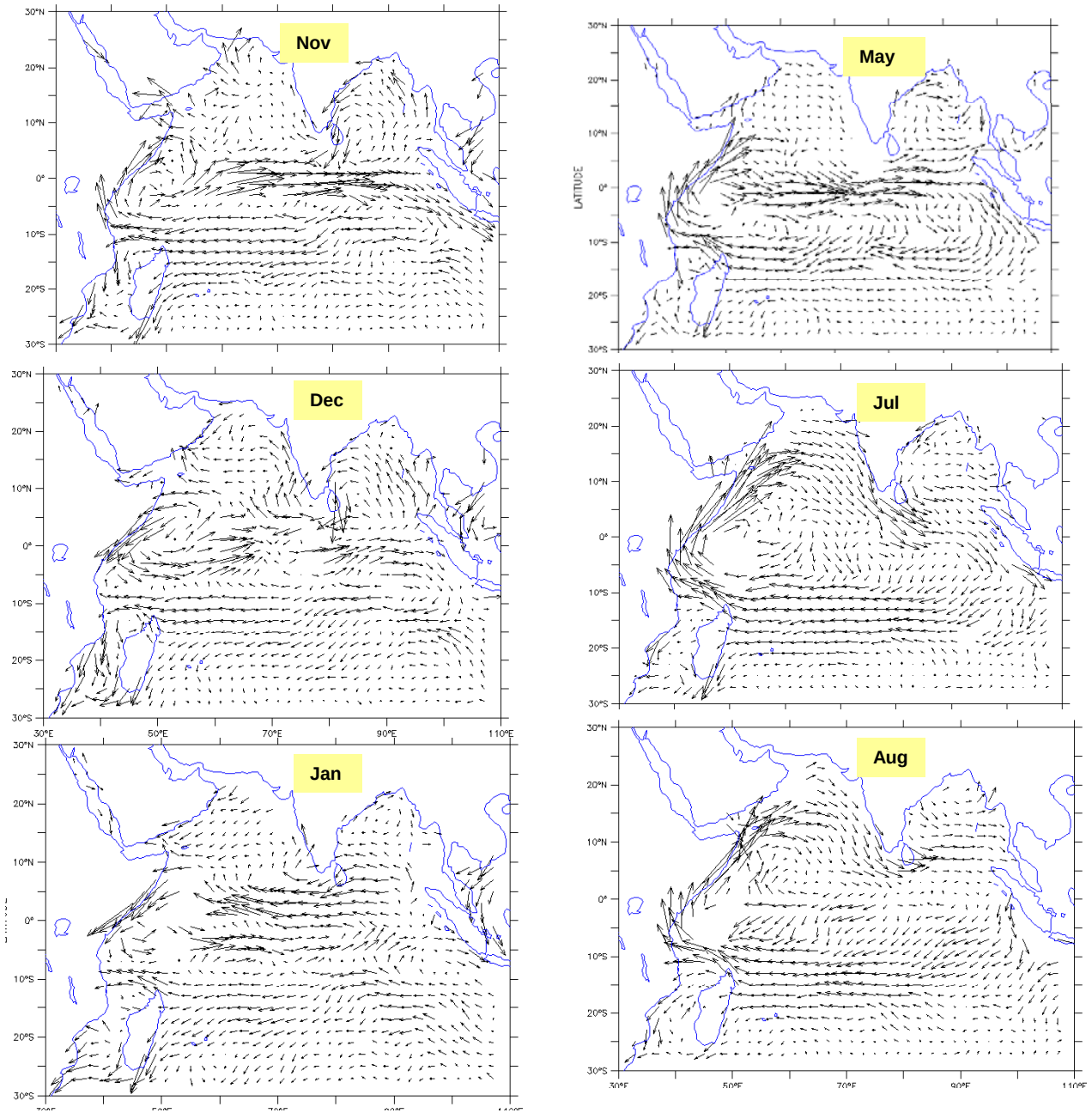




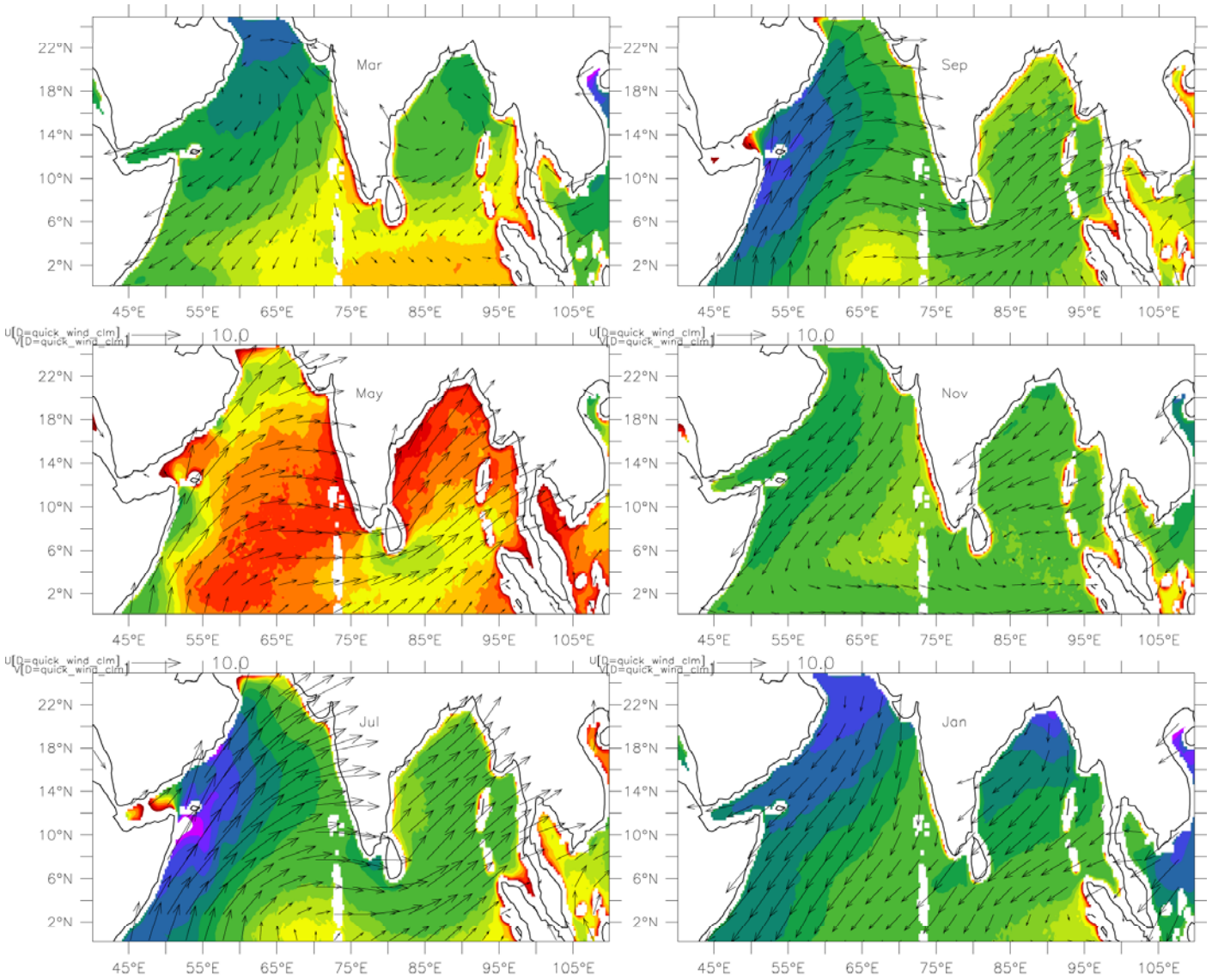
W23 & W45 have greater number of inversions leading to higher SST's during the following summer of 2003 & 2005.

W56 & W78 have fewer inversions leading to lower SST's during following summer of 2006 & 2008.

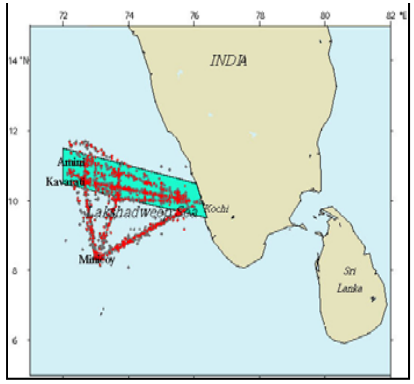
Ocean Surface currents derived from Drifter data

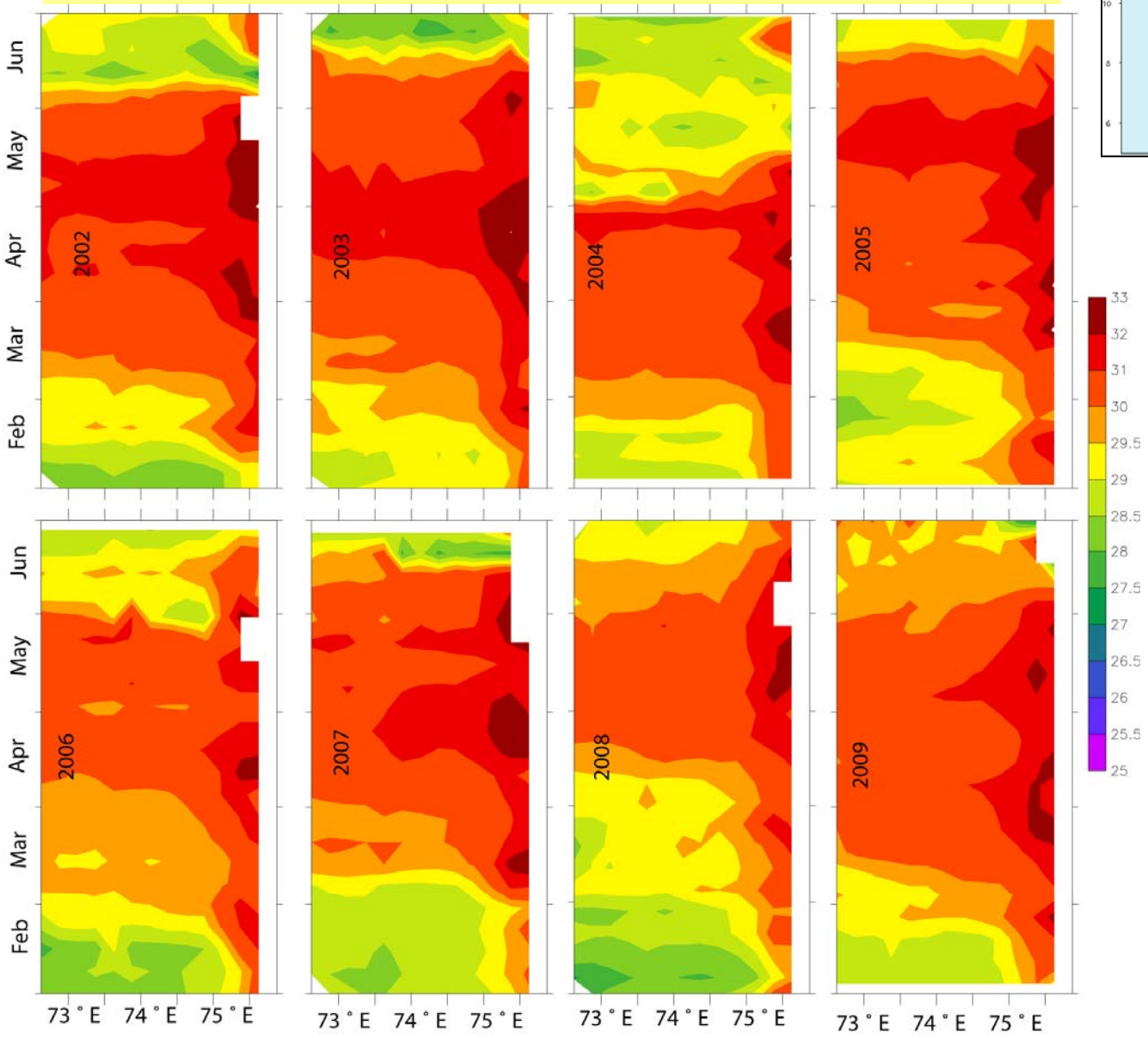


Influence of winds on SST

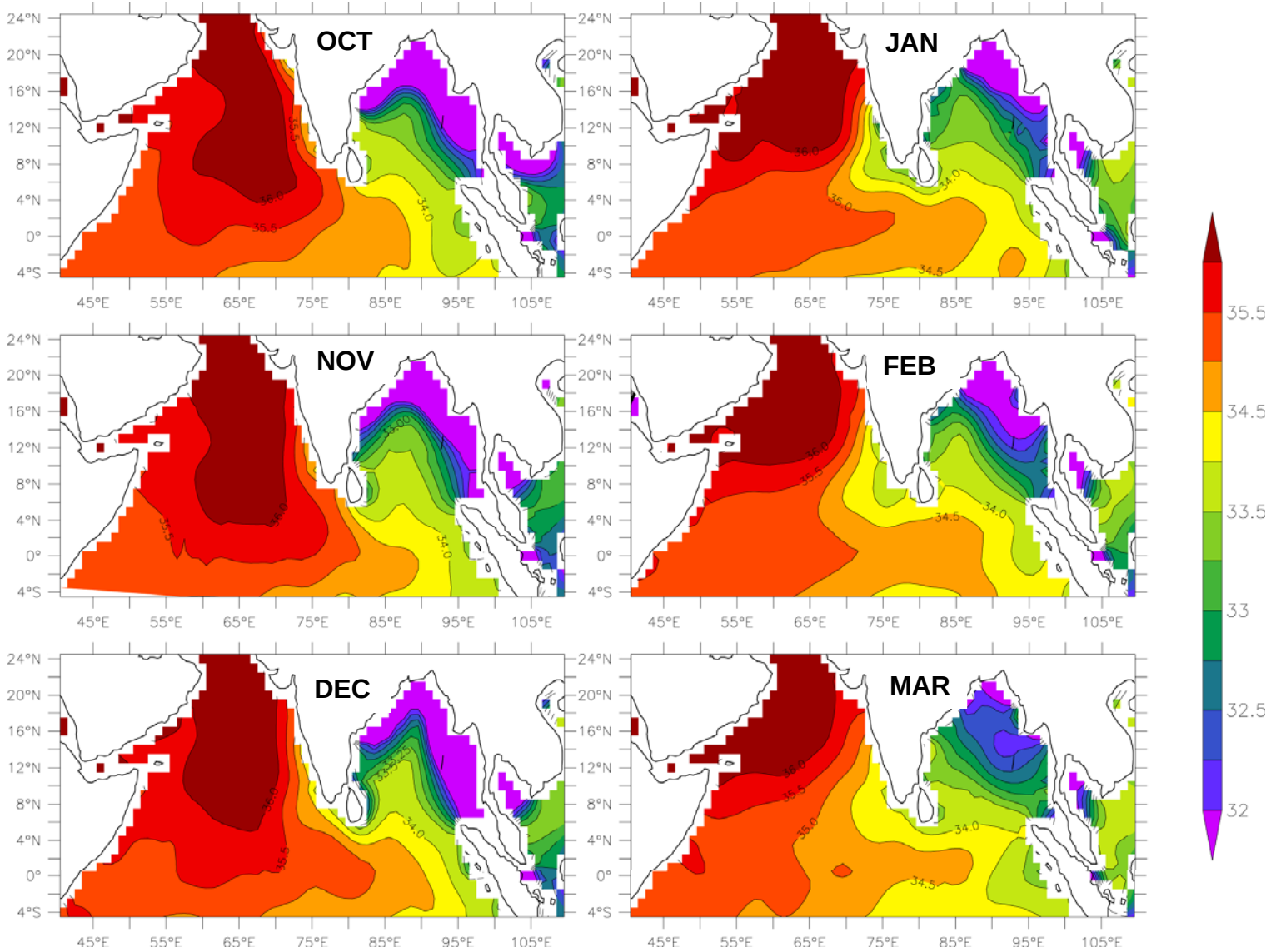


Hovmuller plot of TMI SST during Feb – June along the XBT transect

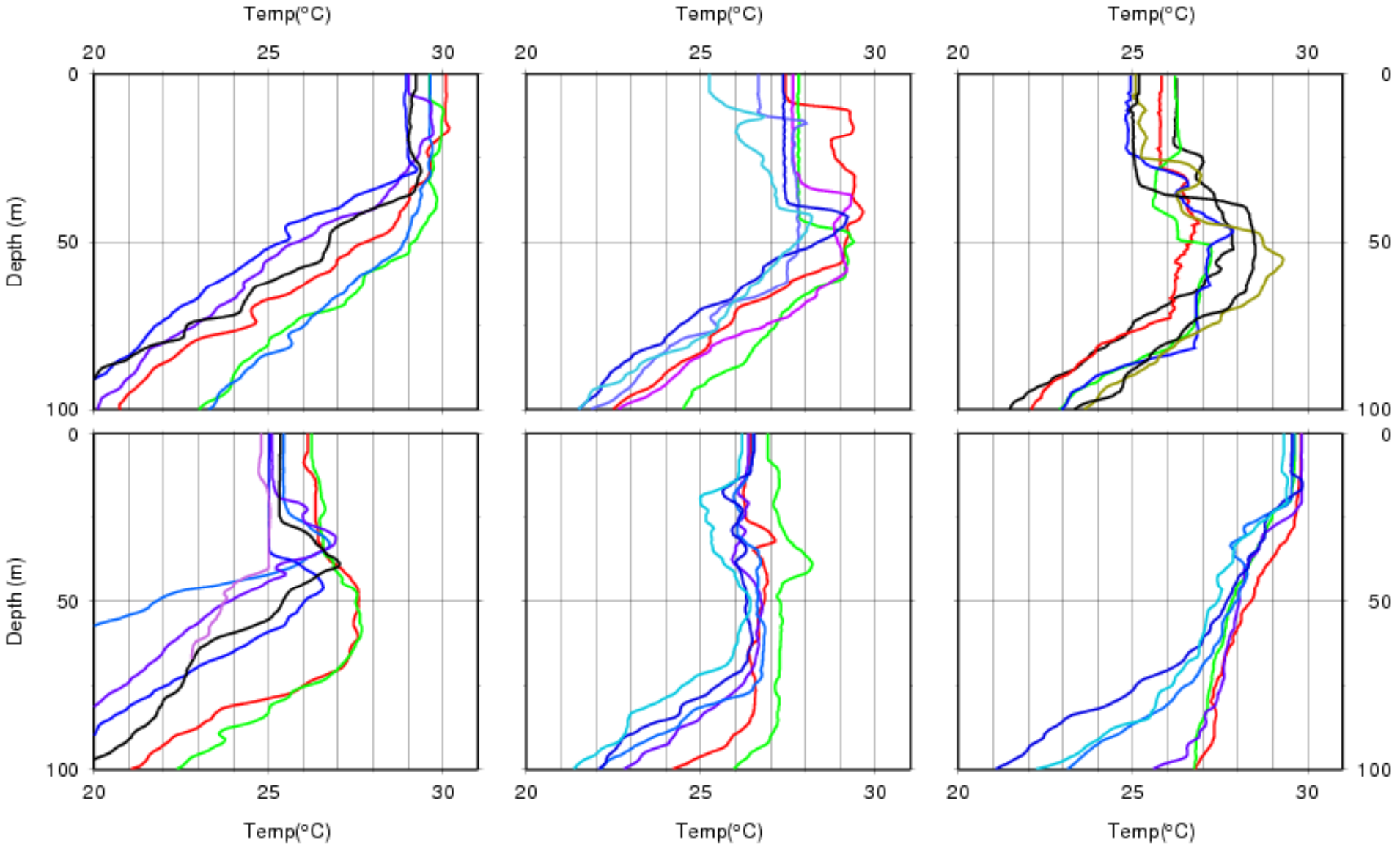




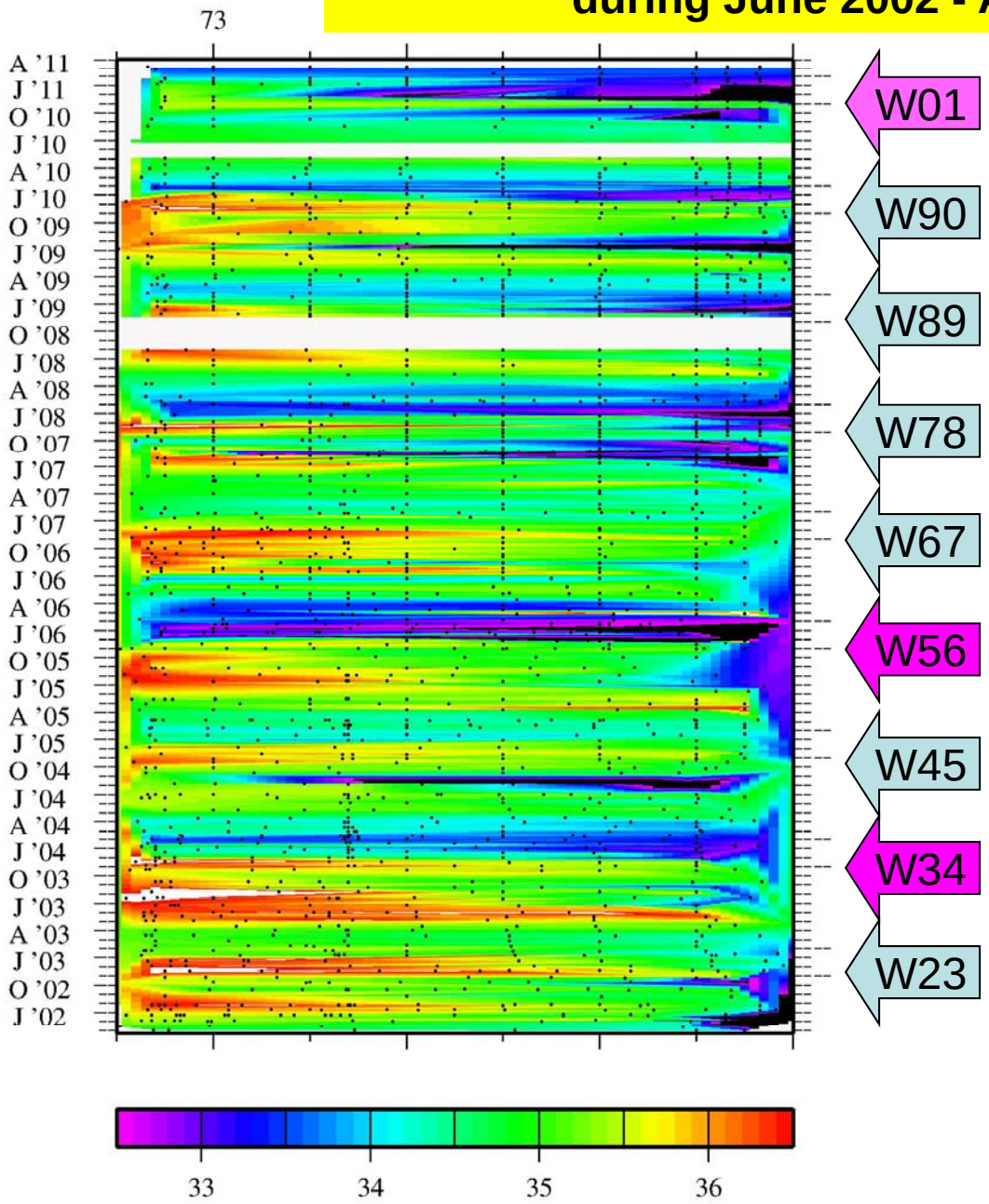
Climatology of sea surface salinity



Evolution of Thermal Inversion

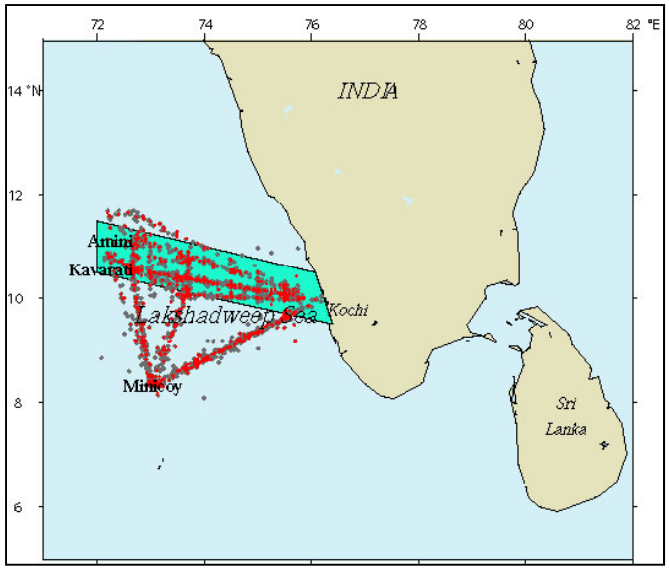


Hovmuller plot of SSS along the shaded strip during June 2002 - Apr 2011



XBT / XCTD & SSS data are collected at 15 day intervals Since May 2002.

Data collection is continuing…..



Nisha, Gopalakrishna et al (2008)
J. Physical Oceanography, Vol 39