Introduction
Seasonal to interannual variations of the background oceanic state in the tropics such as ENSO influence the global atmospheric flow. Recent studies suggest an interactive relationship between ENSO and the Madden-Julian Oscillation [MJO]. This study diagnoses atmospheric circulation patterns associated with MJO events when the maximum global SST is near a selected longitude.

Methods
SST data are meridionally averaged over the tropics. The dates over which the global maximum tropical SST was located in a box 15 degrees west and east of a selected longitude are found. Then these dates are further sorted according to MJO phase. Composite averages of various meteorological fields for each set of dates are compared. The process is repeated by zonally shifting the box.

Results
The extratropical atmospheric flows associated with the MJO change with the location of maximum tropical SST. For example, shifts in peak SST located in the eastern Pacific are associated with changes in the location of the jet stream. The frequency of MJO occurrence and its associated atmospheric variations are modulated by the zonal shifts of warm pool.

Discussion
The longitudinal shifts of SST are associated with changes in the favourable location for convective activity, which influences meridional energy transfer and atmospheric wave patterns. Therefore extratropical atmospheric responses are sensitive to the longitude centre of the warm pool.

Conclusion
Tracking the location of the warmest water in the tropics can improve predictions of the extratropical atmospheric responses to the MJO. This study supplements the understanding of ENSO-MJO interactive relationship.