Regional and Interannual Comparisons of Marine Stratocumulus Characteristics



Fig. I.Annual mean cover with areas of ^o interest outlined in ⁾ black (Hahn and Warren, 2007).



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Conclusions

Each region exhibits unique seasonal and interannual precipitation trends. In summary:

- The Southeast Pacific has the highest occurrence of drizzle in every season compared to the other regions (Fig. 3).
- Nighttime drizzle peaks during the season with highest cloud fraction
- (Klein and Hartmann 1993).
- The following vary interannually:
 - Overall drizzle frequency(Fig. 5)
 - Extent of area of high frequency drizzle (Fig. 4)
 - Diurnal variations of drizzle frequency (not shown)
- Moving west from the coast there is a covarying increase in drizzle occurrence, decrease in CDNC, and increase in SST (Fig. 6). Neither SST nor CDNC appears to be a dominate control on precipitation frequency.
- CDNC may have a threshold effect wherein a floor value must be reached for frequent drizzle to potentially occur. Once the CDNC floor is reached, the height of the boundary layer appears to modulate drizzle with deeper boundary layers associated with more drizzle.
- Surface convergence may contribute to near-coast drizzle enhancement in cases were aerosol content and boundary layer height would create an otherwise unfavorable environment

References

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