

Abstract Submitted
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Spectral regimes in sea-surface winds ROBERT M. KERR, GREG KING, KUANG C. PIEN, University of Warwick — Second and third-order structure function analysis of the sea-surface wind over the Pacific Ocean from 40S to 40N finds spectral regimes that change slope and possibly direction of energy transfer depending upon the latitude or longitudinal bands chosen. Slopes tend to $r^{2/3}$ for all zonal (E-W) 2nd-order structure functions for $r \leq 500km$, with larger slopes for $r > 1000km$ between mid-latitude bands 30N/S – 40N/S and smaller slopes for $r > 1000km$ from 10S – 10N. Meridional (N-S) structure functions are much steeper and have smooth changes from one side of the Pacific to the other. 3rd-order structure functions are consistent with a downscale flow of energy for $r < 500km$ in all bands. For 30N/S – 40N/S there could be downscale energy flow for all r , but for 10S – 10N there could be an upscale flow of energy for $r > 500km$, pointing to an energy source in the equatorial regions for $r \approx 500km$.

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