



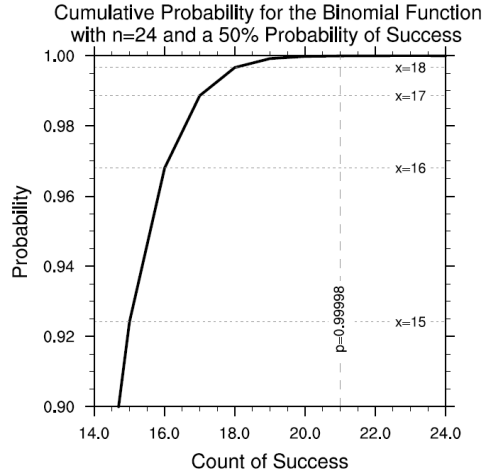
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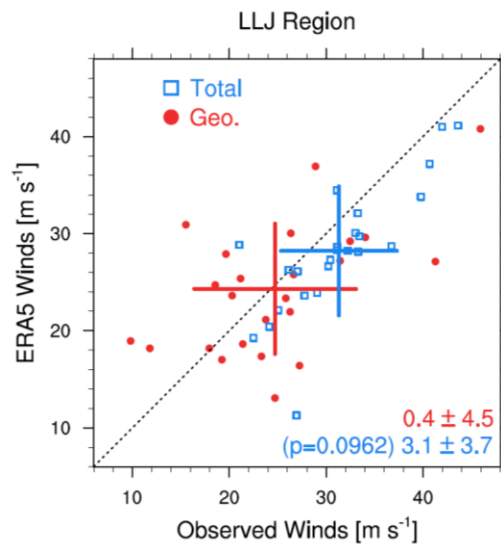
## Supplemental Material

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Supplemental Figure 1: A cumulative binomial distribution for a sample size of  $n=24$  and a 50% probability of success. The vertical dashed line represents the number of positively ageostrophic cases and the horizontal dotted lines are reference lines to indicate the cumulative probabilities at different counts of success. The number on the vertical line is the two-tail cumulative probability for 21 counts of success and the numbers on the horizontal lines are the counts of success for each line.



Supplemental Figure 2: The same as Fig. 7a except that the “Total” winds are not rotated here and are the true total wind speeds.