



Fig. 7-9. A plot of the Ekman wind using Eq. (7-54), with $f=10^{-4}$ and $K=10 \text{ m}^2 \text{ s}^{-1}$; $l_E=450 \text{ m}$ and $z_i \simeq 1400 \text{ m}$. Without loss of generality, the components of Eq. (7-54) can be written as $\bar{u}=u_g(1-e^{-z/l_E}\cos z/l_E)$ and $\bar{v}=u_g e^{-z/l_E}\sin z/l_E$ by setting $v_g=0$, which is how they are displayed in this figure. Rotating the figure through the angle given by the arctangent of v_g/u_g gives the solution of Eq. (7-54) for any direction of the geostrophic wind.