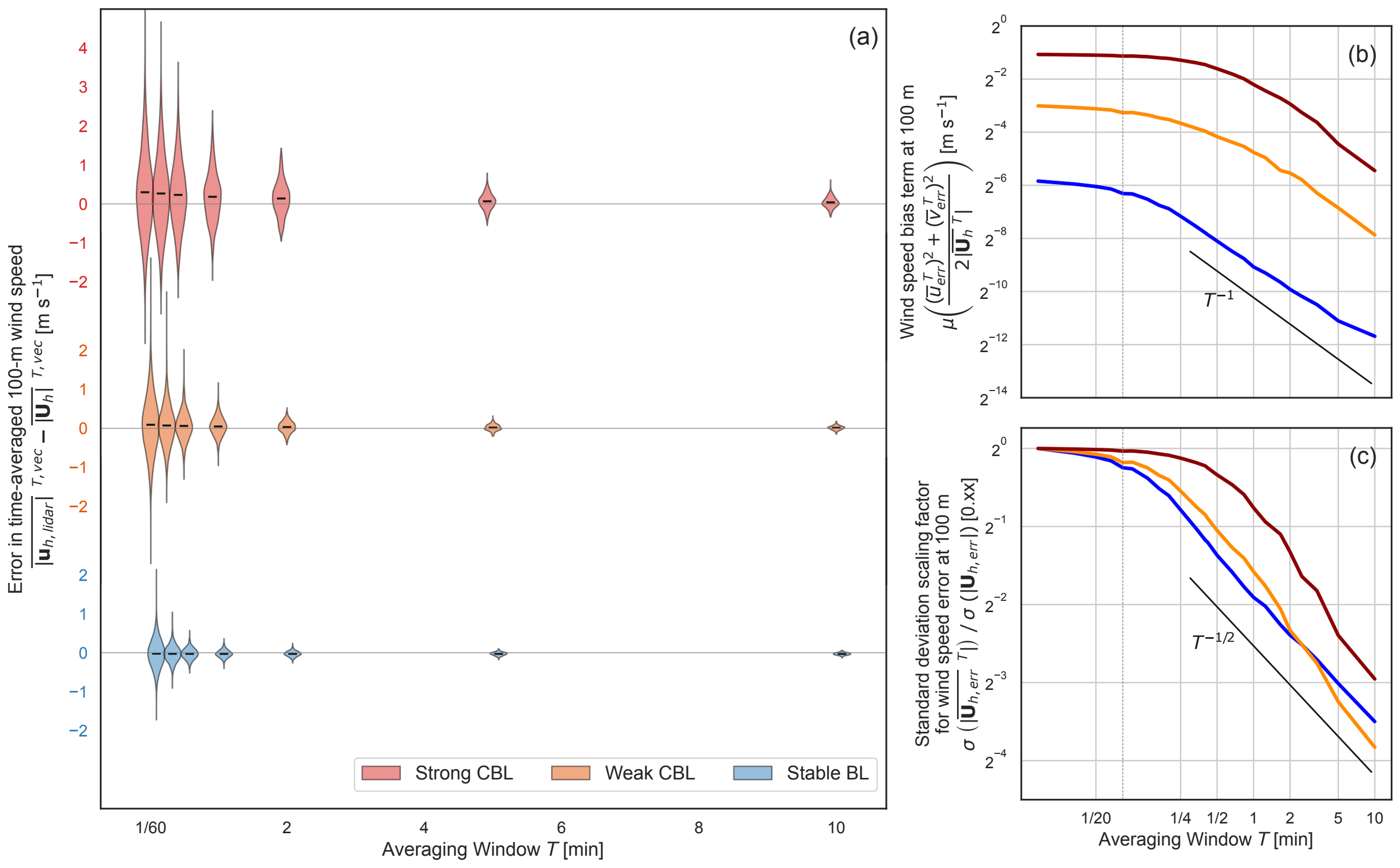
(a)
(b)
(c)
Error in time-averaged 100-m wind speed
$\overline{|\mathbf{u}_{h,lidar}|}^{T,vec} - \overline{|\mathbf{U}_h|}^{T,vec}$ [m s^{-1}]
Strong CBL
Weak CBL
Stable BL
1/60
2
4
6
8
10
Averaging Window T [min]
Wind speed bias term at 100 m
$\mu\left(\frac{(\overline{u}_{err}^T)^2 + (\overline{v}_{err}^T)^2}{2|\overline{\mathbf{U}_h}^T|}\right)$ [m s^{-1}]
T^{-1}
Standard deviation scaling factor for wind speed error at 100 m
$\sigma\left(|\overline{\mathbf{U}_{h,err}}^T|\right) / \sigma\left(|\mathbf{U}_{h,err}|\right)$ [0.xx]
$T^{-1/2}$
1/20
1/4
1/2
1
2
5
10
Averaging Window T [min]