	IECKAI	IECVKM	SMOOTH	WF_UPW	WF_07D	WF_14D	NWTCUP	NWTCUP- KHTEST	GP_LLJ
Meteorological Boundary Conditions									
IEC Edition number	3	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IEC ETM "c" parameter	2	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Wind profile type	IEC	IEC	IEC	IEC	IEC	IEC	IEC	IEC (only IEC, PL allowed)	JET
Reference wind speed (m/s)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	for JET profiles: $f(Ri, u_*, g(z_{JetMax}))$ + RandomValue
Jet height, z_{JetMax} (m)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$f(Ri,z/L,u_*)$ + RandomValue
Power law exponent, α	0.2 0.14 (61400-3) 0.11 (EWM)	0.2 0.14 (61400-3) 0.11 (EWM)	0.143	$f(Ri)$	same as WF_14D	$f(Ri)$	same as WF_UPW	0.3 (fixed value)	0.143
Surface roughness length, Z_0 (m)	0.03	0.03	0.01	0.018	0.233	0.064	same as WF_UPW	same as NWTCUP	0.005
Non-IEC Meteorological Boundary Conditions									
Latitude (deg)	N/A	N/A	45	45	45	45	45	same as NWTCUP	45
Turbine-layer Richardson Number, *Ri* (actual number used; this parameter does not allow default values)	0	0	user-specified	user-specified	user-specified	user-specified	user-specified	0.02 (fixed value)	user-specified
Rotor-disk averaged u_* (m/s)	N/A	N/A	$g(U_{ref}, z_{ref}, z/L, Z_0)$	$f(g,z/L)$	same as WF_14D	$f(g,z/L)$	g + Random Value	same as NWTCUP	$f(g, z/L$, Coherent Structure Presence)
Mixing layer depth (for unstable conditions), *Zi* (m)	N/A	N/A	$g(u_*$,latitude) or $f(U_{ref}, z_{ref}, Z_0)$	same as SMOOTH	same as WF_14D	same as SMOOTH	same as WF_UPW	same as NWTCUP	same as SMOOTH
Mean hub u'w' Reynolds stress	N/A	N/A	$-u_*^2$	$-u_*^2$	$-u_*^2$	$\pm u_*^2$	$f(U_{hub}, Ri, u_*^2, du/dz, z$, Random Residual, Random Sign)	same as NWTCUP	$f(U_{hub}, Ri, z/L, du/dz, u_*^2, z$, Random Sign)
Mean hub u'v' Reynolds stress	N/A	N/A	none	$f(u_*^2, du/dz$, Random Sign)	$f(u_*^2$, Random Sign)	$f(u_*^2$, Random Sign)	$f(U_{hub}, Ri, u_*^2, du/dz, z$, Random Residual, Random Sign)	same as NWTCUP	$f(U_{hub}, Ri, z/L, u_*^2, z$, Random Sign)
Mean hub v'w' Reynolds stress	N/A	N/A	none	$f(u_*^2, du/dz$, Random Sign)	$f(u_*^2$, Random Sign)	$f(u_*^2$, Random Sign)	$f(U_{hub}, Ri, u_*^2, du/dz, z/L, z$, Random Residual, Random Sign)	same as NWTCUP	$f(U_{hub}, Ri, du/dz, u_*^2, z$, Random Sign)
u root coherence decrement (*a* parameter)	12.0 (Ed 3) 8.8 (Ed 2)	same as IECKAI	U_{hub}	$f(U_{hub}, z_{hub}, Ri)$	same as WF_14D	$f(U_{hub}, z_{hub}, Ri)$	$f(U_{hub}, z_{hub}, Ri)$	same as NWTCUP	$f(U_{hub}, z_{hub}, Ri)$
u root coherence offset (*b/L* parameter)	0.021/min(z_{hub},60m) (Ed 3) 0.049/min(z_{hub},30m) (Ed 2)	same as IECKAI	0	$f(U_{hub})$	same as WF_14D	$f(U_{hub})$	$f(U_{hub}, Ri)$	same as NWTCUP	$f(U_{hub}, Ri)$
v root coherence decrement (a parameter)	inf	same as IECKAI	0.75 U_{hub}	$f(U_{hub}, z_{hub}, Ri)$	same as WF_14D	$f(U_{hub}, z_{hub}, Ri)$	$f(U_{hub}, z_{hub}, Ri)$	same as NWTCUP	$f(U_{hub}, z_{hub}, Ri)$
v root coherence offset (*b/L* parameter)	0	same as IECKAI	0	$f(U_{hub})$	same as WF_14D	$f(U_{hub})$	$f(U_{hub}, Ri)$	same as NWTCUP	$f(U_{hub}, Ri)$
w root coherence decrement (a parameter)	inf	same as IECKAI	0.75 U_{hub}	0.4 $coh_a(u)$	same as WF_14D	0.4 $coh_a(u)$	$f(U_{hub}, z_{hub}, Ri)$	same as NWTCUP	$f(U_{hub}, z_{hub}, Ri)$
w root coherence offset (*b/L* parameter)	0	same as IECKAI	0	10.0 $coh_{b/L}(u)$	same as WF_14D	10.0 $coh_{b/L}(u)$	$f(U_{hub}, Ri)$	same as NWTCUP	$f(U_{hub}, Ri)$
coherence exponent	N/A	N/A	0	0	0	0	0	same as NWTCUP	0
Other calculated values:									
z/L	N/A	N/A	$f(Ri)$: Businger-Dyer	same as SMOOTH	same as WF_14D	same as SMOOTH	$f(Ri)$: LIST data	same as NWTCUP	$f(Ri)$: Lamar data
z/L (z) profile	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	for JET profiles: for Ri>=0, $f(Ri, U(z))$; for Ri < 0, $f(z,Ri,U(z))$ for Non-JET profiles: for Ri>=0, $f(z,Ri,U(z))$ for Ri < 0, $f(z,U(z))$
u_*(z) profile	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	for JET profiles: for Ri>=0, $f(z, Ri, U(z), z/L(z))$; for Ri < 0, $f(z, Ri, U(z))$ for Non-JET profiles: $f(z, Ri, U(z))$
Jet wind speed profile Chebyshev coefficients	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$f(z_{JetMax}, UH_{JetMax}, Ri, u_*)$
Wind direction profile Chebyshev coefficients	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	$f(z_{JetMax}, UH_{JetMax}, Ri, u_*)$
Coherent Structure Scaling									
Dataset scaling is based on	N/A	N/A	same as GP_LLJ	San Gorgonio inflow data	Thin Airfoil data	San Gorgonio outflow data	NWTC LIST experiment	same as NWTCUP	Lamar LLJP
Coherent structure inter-arrival times	N/A	N/A	same as GP_LLJ	$f(Ri, U_{center})$	$f(Ri, U_{center})$	$f(Ri, U_{center})$	$f(Ri, U_{center})$	same as NWTCUP	$f(z_{center}, U_{center})$
Coherent structure expected length	N/A	N/A	same as GP_LLJ	Random Value	Random Value	Random Value	Random Value	same as NWTCUP	Random Value is $f(z)$
Coherent structure peak CTKE	N/A	N/A	same as GP_LLJ	$f(Ri, U_{center}, \sigma_{w_hub})$	$f(Ri, u_*, \sigma_{w_hub})$ + Random Value	$f(Ri, U_{center}, \sigma_{w_hub})$	$f(Ri, U_{center}, \sigma_{w_hub})$ + Random Value	30 + Random Value	Random Value
Spectral Peak Scaling									
Parameters for stable conditions (other than height & wind speed)	N/A	N/A	z/L	z/L	same as WF_14D	z/L	z/L	same as NWTCUP	local z/L, local u_*
Number of peaks for stable conditions (u/v/w)	N/A	N/A	1/1/1	2/2/2	same as WF_14D	2/2/2	2/2/2	same as NWTCUP	2/2/1
Parameters for unstable conditions (other than height & wind speed)	N/A	N/A	Zi, M-O Length	z/L, Zi, M-O Length	same as WF_14D	z/L, Zi, M-O Length	z/L, u_*, Zi, M-O Length	same as NWTCUP	same as SMOOTH
Number of peaks for unstable conditions (u/v/w)	N/A	N/A	2/2/2	2/2/2	same as WF_14D	2/3/2	2/2/2	same as NWTCUP	same as SMOOTH