

Indices/ Parameters	Severe weather activity	Formula	References
SI	"SI>3", stable	$SI = T_{500} - Tp_{500}$	(Showalter, 1953; NWS, 2023)
	"1<SI<3", thundershowers possible		
	"-2<SI<1", TS possible		
	"-3<SI<-2", TS probable		
	"-6<SI<-3", severe TSs, very unstable		
LI	"SI<-6", strong TSs, tornado possible	$LI = T_{500} - Tp_{500}$	(Galway, 1956; NWS, 2023)
	"LI>2", stable		
	"0<LI<2", TSs possible		
	"-2<LI<0", TSs possible		
	"-4<LI<-2", TSs probable		
SWEAT	"LI<-4", tornado possible	$SWEAT = 12[Td_{(850\ hPa)}] + 20(TTI - 49) + 2(f8) + f5 + 125(S + 0.2)$	(Miller et al., 1972; NWS, 2023)
	"SWEAT<150", TS unlikely		
	"150<SWEAT<300", slight severe		
	"300<SWEAT<400", TSs possible,		
	"SWEAT>400", tornadoes possible		
KI	"KI<15", TS unlikely	$KI = (T_{850\ hPa} - T_{500\ hPa}) + T_{d850\ hPa} - (T_{700\ hPa} - T_{d700\ hPa})$	(George, 1960; Peppler and Lamb, 1989; NWS, 2023)
	"15<KI<25", isolated TSs		
	"25<KI<35", few-scattered TSs		
	"KI>35", numerous TSs		
TTI	"TTI<44", TS unlikely		
	"44<TTI<50", TS likely	$TTI = T_{850\ hPa} + T_{d850\ hPa} - 2[T_{500\ hPa}]$	(Miller, 1967; Miller et al., 1972; Pepler and Lamb, 1989; NWS, 2023)
	"50<TTI<56", severe TSs		
	"TTI>56", more probable severe TSs		
CAPE	"CAPE<300", stable		
	"300<CAPE<1000", marginal unstable	$CAPE = \int_{LFC}^{LNB} R_d(T_{vc} - T_{ve}) d\ln P$	(Lucas et al., 1994; Ye et al., 1998; NWS, 2023)
	"1000<CAPE<2500", moderate unstable		
	"CAPE>2500", very to extreme unstable		
CIN	"CIN>-15", stable		
	"CIN<-15", unstable	$CIN = \int_{p_i}^{p_f} R_d(T_{vp} - T_{ve}) d\ln P$	(Zhang, 2003; NWS, 2023)
BRN	"BRN<10", TS unlikely		
	"10<BRN<45", TS likely		
	"BRN>45", super-multicells		
		$BRN = \frac{(\frac{g}{T_v})\Delta\theta_v\Delta_z}{(\Delta U)^2 + (\Delta V)^2}$	