

700 hPa Height / Vertical Velocity / Winds: These quantities are fields generally used to assist in diagnosing the lower tropospheric atmospheric conditions and flow. Vertical velocity depicts the vertical motion, in a height coordinate (dz/dt) framework, at the 700 hPa (mb) pressure level. Units are cm/sec. 700 hPa is chosen as a representative level for vertical atmospheric motions forced by synoptic and meso- α scale weather systems (200-20,000 km horizontal scale). Positive values denote rising motion, negative values denote sinking motion.

Note that the values of this field can vary significantly from domain to domain over the same spatial area due to the fact that at finer grid resolutions model can produce more localized meso- β and meso- γ scale (2-200 km) motions related to topography, convective systems, surface forcings and radiative forcings. Such localized forcings often act to modulate larger scale forcing mechanisms and can be the dominant weather producers under an otherwise quiescent large scale environment. These facts should be kept in mind when interpreting the forecasts of this field on the different domains.