

An Updated Mobile Radar Based Climatology of Tornadoes

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Tornadoes are much stronger and larger than damage-based surveys indicate. We present a radar-based analysis of the peak intensity and size at peak intensity of 139 tornadoes observed by the Doppler On Wheels (DOW) mobile radars. In striking contrast to damage-based climatologies, we show that the average tornado exhibits maximum winds near 60 m s^{-1} capable of causing Enhanced Fujita Scale (EF) 2-3 damage. We show that 25% of tornadoes could cause the most intense EF-5 level damage. We show that the average diameter the region enclosing these peak winds is over 400 m. This has significant implications for tornado risk, particularly as human development expands rapidly in tornado-impacted regions.