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Tornado Model C BRUCE JOHNSON, Johnson Scientific Group Inc — A model is presented for how the electrical energy stored in a thundercloud can initiate and sustain high wind velocities in the cloud-to-ground region, and how the resulting intense updrafts can result in a tornado. It is known that tornados 1-are accompanied by intense atmospheric electrical activity, 2-originate in thunderclouds as microtornados that descend toward the earth, 3-become dangerous to life and property when they make contact with the ground, and 4-they dissipate when the atmospheric electrical activity in the thundercloud weakens. The high electric field strength between the thundercloud-and-ground gives rise to high atmospheric ion drift velocities. These ions speed toward the bottom of the thundercloud, and in the process air molecules are also dragged along at high speed. The resulting electronic discharge channel that connects the cloud to the ground carries the ion current that tends to discharge the cloud. The tornado continues to exist as long as the electrical energy in the cloud-to-ground system is sufficient to maintain the electrical discharge channel within the tornado

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