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Developing More Accurate Models of Tornados

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Developing More Accurate Models of Tornadoes

Tornadoes seem to be touching down more frequently in Ontario recently and, though not as large as those in places like Oklahoma, are a reminder that we live in tornado alley. Therefore, it is crucial that we understand the key characteristics of tornadoes by creating model versions of them and testing our infrastructure's ability to withstand them. However, current models still use assumptions based on work from the 1970's that underestimate the destructive potential of tornadoes, leaving homes inadequately prepared. In sophisticated modern tornado simulations, I have observed movement over many kilometres and dramatic wobbling like a spinning top. With a novel method to track this motion, I have identified dangerous wind speeds over 1.3 times greater and two times further from the tornado centre than previous models predict. My work will provide more accurate modelling and tracking methods to improve infrastructure design for protection against tornadoes.

Word Count: 147