Scientist creates 'micro-tornadoes'

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Meteorologists concerned about a possible worldwide intensification of tornado activity may now be able to study tornadoes in the lab.

Andrei Sommer of the University of Ulm in Germany has formed "micro-tornadoes" under millimeter-scale crystalline "igloos."

Sommer evaporated tiny drops of water laced with polystyrene nanospheres to form transparent igloos. The drops consist of 15 microliters of liquid and form the igloos after being deposited on a surface under an evaporation chamber.

As the drops evaporated, Sommer observed patterns formed by swirling micro-vortexes that appeared similar to those formed by tornadoes.

Because the conditions favoring the formation of the micro-tornadoes are identical to those forming real tornadoes, Sommer suggested such igloos and their micro-tornadoes could become important new tools for meteorologists seeking to understand how certain atmospheric conditions spawn tornadoes.

"By simultaneously wetting the roof of such an igloo, if necessary, and injecting minimal amounts of water containing nanospheres into it, it should be possible to mimic basic processes in tornadoes experimentally and to explore the impact of relevant boundary conditions including terrain conditions and cloud cover," he said.

The research is to appear in the June 6 issue of the journal *Crystal*

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