

'Weather in a Tank' Experiment

A demonstration of Rossby Waves and cyclonic and anticyclonic rotation, provided by Dr. Jude Sabato, Department of Earth Sciences & Science Education, for the Department of Geography & Planning's 'Severe & Unusual Weather' Class (GEG 383) on November 2, 2015.

The experimental set-up: the Earth's atmosphere is simulated with water. A can of ice is positioned in the middle of the tank to simulate a cold polar region, while the circumference of the tank represents the warmer equatorial region – a temperature gradient is created between the 'pole' and 'equatorial region'. The tank is rotated to simulate the Earth's rotation about its axis and the resulting Coriolis Force. Given these basic conditions, the result is the formation of Rossby waves and cyclonic and anti-cyclonic rotation, as would occur in the Earth's atmosphere.



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