NADP SENSOR STUDY

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In mid-2012 the National Atmospheric Deposition Program (NADP) began a field study comparing precipitation sensors used in its wet-deposition networks. The goal of the study is to identify differences between sensors in terms of detecting the onset of precipitation and duration of the precipitation event. The study includes both grid/plate type sensors and optical sensors. Testing focuses on precipitation sensors used in the NADP networks.

The study is being conducted at the NADP site in Bondville, Illinois. Sensors are configured in a grid, with each grid cell being approximately 13 ft by 13 ft (4m by 4m). The height of each sensor from the ground ranges from 4 ft to 5 ft (1.2m to 1.5m), allowing for changes in elevation.

NADP precipitation sensors used in the study are configured in pairs. This will help define the variability of a particular sensor. Placement of the sensors was determined through double randomization. Grid locations and individual sensors were assigned numeric values using a random number generator. Numeric values were then matched.

Results of the study will provide insight into the following questions

- Which settings (number of droplets per interval of time and switch-off delay) are most appropriate for operating the optical sensors?
- What impact does the precipitation type have on the operation of the sensor?
- How sensitive is each sensor type to blowing snow and mist?

It is anticipated that the sensor study at IL11 will continue through 2013 in order to capture differences with different precipitation types.