

Emerging Technologies in the Field in Support of Operations and Research

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ABSTRACT

Over the past half-century, mobile storm observers in the field helped revolutionize our understanding of severe storm behavior and characteristics. This was at least partially accomplished through the use of various platforms, including visual observations and new innovative technologies. Severe weather reports from researchers and storm hobbyists, in addition to trained SKYWARN volunteers, have long provided a significant enhancement to the warning decision process utilized by local National Weather Service forecast offices.

Advances in technology over the past decade, specifically the widespread availability of low-cost, high speed internet via cell phone and broadband cards, allow storm observers an unprecedented opportunity to support both the operational and research communities with real-time information. This is especially evident in rural areas common to the American Great Plains, where very low population densities tend to limit the flow of information in a timely manner. This paper examines three prominent emerging technologies: the Spotter Network (SN), the Mobile Rapid Environmental Sampling System (MRESS), and the Live Chase Cams (LCC). These tools provide real-time applications for severe weather reporting, dissemination of data collected in situ, field coordination, mesoanalysis, warning decision making, and quicker dissemination of relevant information to the public. A vision of the development and integration of these technologies is described and discussed.