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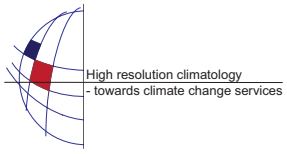

Mesonet Programs - Needs and Best Practices

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There are many well documented and compelling needs for significant improvements in mesoscale meteorological observations throughout many parts of the world. This is evidenced by the fact that the vast majority of severe weather impacts and related life, property and economic losses are associated with mesoscale events such as tornados, thunderstorms, fronts, squall lines, etc. Additionally, the looming impacts of climate change are likely to vary substantially on a regional basis requiring more detailed information on a finer scale. Hence, development of comprehensive densely spaced observing systems can establish the critical information repositories needed to improve: short- and medium-term weather and wind forecasting down to local scales, climate monitoring on a regional basis, as well as decision support capabilities including plume dispersion modeling and air quality forecasting, to name a few.

It is imperative that governmental/public/private/academic partnerships are formed to leverage the collective expertise, assets and technological know-how of each sector. Collaboration of this type is particularly germane given that many existing mesonets (weather networks) have been deployed by local organizations with local considerations in mind. These stakeholders maintain the capacity to react quickly and efficiently and are best positioned to recommend future network evolution within their domains. Additionally, coordination will go a long way toward avoiding duplication of effort and promote both a robust private sector and wise expenditure of public funds.

This presentation will outline the major building blocks of a mesonet program and discuss best practices for a multi-tiered, multi-faceted “network of networks” approach that maximizes the value derived from leveraging existing assets and serves multiple needs. On-going activities within the U.S. National Mesonet Program will be highlighted.