



Driftsonde Developments at NCAR for the THORPEX Programme and Planned Future Field Activities

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Recent theory suggests that the skill in numerical prediction of atmospheric flows might be improved through taking additional observations in regions where the forecast exhibits a strong sensitivity to errors in the initial conditions. The concept of a measurement strategy based on taking observations where and when needed rather than at fixed synoptic times and locations is often referred to as “targeting”. One of the core research goals of the World Meteorological Organisation’s THORPEX Programme is to research whether targeting is beneficial for operational prediction of high-impact weather events. Targeting can be satellite—based (e.g., increasing the utilization and/or number of satellite observations) or through providing additional in-situ measurements. This submission describes recent progress at NCAR to develop and deploy a relatively low-cost stratospheric balloon and gondola system designed to deploy radiosondes over remote locations of the globe. The stratospheric balloons can be launched upstream of the locations of sensitive regions as predicted by model climatologies. This talk will present: i) The results of the first five test flights of this system including a 2 1/2 day flight over the Pacific, ii) future plans for the prospective of the engineering development, and iii) future field tests for THORPEX including a demonstration project during hurricane season with the French CNES group during the AMMA program. The talk will also touch on the development of a small wind and temperature sonde designed to provide wind measurements in regions of extensive cloudiness where satellite-based techniques to derive winds are a distinct challenge.