CHAPTER I. WASHITA '92 EXPERIMENT DESCRIPTION

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A. REMOTELY SENSED DATA SETS

Washita '92 was a cooperative experiment between NASA, USDA, several other government agencies and universities. The final goal of the experiment is to test the usefulness of remotely sensed data in hydrologic modelling. The primary goal during the experiment was to collect a time series of spatially distributed hydrologic data, focusing on soil moisture and evaporative fluxes, using both conventional and remotely sensed methods. Other specific goals during the experiment included the testing and verification of several new remote sensing devices and the development of data bases for target-sensor interaction algorithms.

The two key elements of the success of this experiment were the support of NASA in providing the aircraft hours to fly the instruments and the cooperation of the USDA Water Quality Lab in the ground operations and instrumentation. NASA provided support for two aircraft; the C-130 and the DC-8. The C-130 carried the ESTAR L band microwave radiometer, the 37 GHz microwave radiometer, the laser profiler, the NS001 multispectral scanner, the thermal infrared multispectral scanner and two cameras. The DC-8 flew the three frequency synthetic aperture radar.

B. GROUND DATA SETS

The Little Washita Watershed was selected for this effort due to the extensive hydrologic research that has been conducted there in the past, its ongoing data collection efforts, the cooperation and facilities of its staff, and the complementary nature of the region to previously conducted large scale remote sensing experiments. Washita'92 was the most ambitious experiment of this type that had been conducted to date and focused on an area nearly an order of magnitude larger than previous work.

Data collection was conducted during the period of June 10 through June 18,

1992. The observations followed a period of very heavy rains over several weeks that ended on June 9. We encountered saturated soil conditions with standing water quite common. No rainfall occurred during the experimental period thus allowing the observation of drying conditions.

The objective of this data report is to summarize what was done during the experiment, what data are or will be available, and to present some representative preliminary results.