<Instrument/Measurement Name>

<Authors>

A White Paper Submitted to the

**ARM Aerial Instrumentation Workshop White Paper Call**

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# 1. Short Description

A 1–3-sentence short description summarizing the instrument/measurement, which will enhance the current Atmospheric Radiation Measurement (ARM) aerial measurement capability. This can include the upgrade of an existing instrument (or its use in a different configuration) as well as research infrastructure, such as inlets, etc.

# 2. Science Drivers

List the primary science drivers motivating this instrument/measurement need.

How would it enhance ARM’s measurement capability? What is the value added beyond the existing measurements?

(Relevant science drivers will be an essential aspect of the decision-making process.)

# 3. Full Description

## 3.1. Instrument/Measurement Description

Describe the instrument/measurement need in detail.

Describe why this instrument/measurement would be preferred over alternative approaches. What are pluses and minuses to this approach?

If known, provide the currently recommended instrument characterization/calibration procedure.

## 3.2. Data Analyses

What data products from this instrument/measurement can be readily obtained via published algorithms? What is known about their uncertainties?

Describe the data analyses effort involved, including computational requirements. Do the data analyses require significant manual effort, or are they primarily automated?

## 3.3. Operational Requirement and Experience

Has this instrument been deployed on similar platforms by other agencies in the United States or abroad (e.g., NCAR, NOAA, NASA, DLR, U.K. Met Office)? Please provide examples/campaigns.

If known, describe the requirements to integrate and operate the proposed instrument/measurement on one or several of ARM’s three aerial platforms.

If known, describe installation requirements and operational support required to collect high-quality data.

## 3.4. Potential Difficulties and Justification

What are potential difficulties associated with operating and supporting this instrument/measurement on ARM’s aerial platforms? If possible, please describe what trade-offs could be pursued to moderate operating costs.

Should the instrument truly be adopted as an ARM facility instrument, or should it be an instrument provided by a guest investigator?