PNNL to launch $1.4 million mobile atmospheric-measuring station

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Pacific Northwest National Laboratory set to launch million-dollar mobile atmospheric-measuring station on worldwide tour to fill data gaps in global climate models

Balloon-borne sounding system. Check. Micropulse lidar. Check. Infrared thermometer. Check. Eddy correlation flux measurement system. Eddy correlation flux measurement system?! Check already. These and a dozen other instruments and computer- and maintenance-shop-jammed cargo containers make up the ARM Mobile Facility, or AMF, the world's most sophisticated moveable, atmospheric-measuring suite. In early February, the AMF will be carefully packed and shipped from the Department of Energy's Pacific Northwest National Laboratory, where the system was designed, assembled and is being

tested, to Point Reyes National Seashore, north of San Francisco.

Image: ARM Mobile Facility

There it will be reassembled and take in the local atmosphere, literally, for nine months before heading to sub-Saharan Africa , in time for the 2006 monsoon season in Niger . The instruments are designed to withstand temperatures from minus-40 to plus-120 degrees Fahrenheit, said PNNL's Kevin Widener, AMF chief engineer and supervisor for the testing.

The station is designed to measure the physical properties of literally anything that blows over and the heat that radiates from clouds and from the ground, said Widener, who, with Tom Ackerman, a Battelle fellow at PNNL, designed and put together the $1.4 million system at the behest of the DOE Office of Science.

The AMF is part of DOE's Atmospheric Radiation Measurement (ARM) Climate Research Facility, which already includes fixed sites in Oklahoma , the North Slope of Alaska and the Tropical Western Pacific region near northeastern Australia . The AMF expands the ARM program's reach into additional climatic regions, providing critical information now missing in models.

Besides PNNL's engineering team, key collaborators in the AMF project include Argonne , Brookhaven and Los Alamos national laboratories.

Source: PNNL

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