www.earthnetworks.com/Products/BoundaryLayerNetwork.aspx

Earth Networks Boundary Layer Network

Real-time Profiles of the Atmosphere's Most Turbulent Layer

Observations of the boundary layer, from the ground up to about 3,000 feet, are critically important to the accuracy of atmospheric forecast and research models. But existing sensors are typically limited in time and space, and insufficient to support the forecast accuracy desired by the renewables, utilities, aviation, air quality and water management industries.

Radiometrics MP-3000A Profiler

The Earth Networks Boundary Layer Network (ENBLN) is the first monitoring network for the continuous collection of data in the atmosphere within the planetary boundary layer and up to around 30,000 feet. The ENBLN uses radiometers from Radiometrics Corporation to provide round-the-clock temperature, humidity and liquid profiles of the boundary layer and above. Earth Networks will combine observations from these instruments with information from its global weather network of more than 8,000 weather stations.

Key Features

Real-time & Continuous Data for Better Decision-Making

Temperature, humidity and liquid profiles of the boundary layer and above are updated every six minutes. The increased update frequency over existing radiosonde networks, which typically release balloons twice a day, improves model accuracy and operational decision-making.

Data Where It Matters Most

Existing boundary layer observations primarily consist of radiosonde balloons that drift as they rise through the air, and aircraft sensors that collect data during takeoff, landing and reroute. The ENBLN provides consistent, continuous data from fixed locations selected to yield the most benefit to industry and society.

Earlier Warning of High-Impact, Local Weather

Improved information about the instability of the atmosphere enables advanced notification of convective initiation that leads to severe thunderstorms and tornadoes. The ENBLN will combine with data from existing networks to improve the lead time and accuracy of severe weather warnings.

Atmospheric Instability

ENBLN data provides improved information about the instability of the atmosphere, such as that produced by heating of the surface, strong winds and rough or hilly terrain. This data is particularly useful for utilities, wind-power forecasting and air quality managers.

Suspended Liquid Data

The ENBLN's continuous monitoring of the amount and temperature of liquid in the atmosphere provides valuable data to the utilities, solar-power forecasting, aviation and water management industries.

State-of-the-Art Radiometers

Rugged, portable radiometers from Radiometrics, the leader in thermodynamic profiler sensing technology, deliver continuous data with radiosonde-equivalent assimilation accuracy. Mature software generates a full suite of forecast tools and indices in familiar meteorological format.

ENBLN: Data for Improved Local Forecasts & Decision-Making

Wind:

Radiometers provide key insight into atmospheric instability. Feeding this data into numerical models improves forecasts of local wind conditions.

Solar:

Robust measurements of humidity, suspended liquid and temperatures within the boundary layer help to more precisely estimate the amount of solar radiation that will reaching the ground.

Utilities:

Boundary layer observations provide utilities the data needed for more accurate output from weather models, ultimately leading to improved load forecasts.

Air Quality:

The ENBLN provides real-time, continuous data on atmospheric stability, which is key to determining the Ventilation Index and producing better forecasts of local air quality.

Aviation:

Radiometers can spot convective initiation up to 30 minutes prior to radar or satellite. In addition, they provide the data needed for accurate forecasts of icing and fog.

Water Management:

Suspended liquid data from the ENBLN allows water managers to optimize seeding activities and seed only when conditions are favorable.

Approximation of initial ENBLN roll-out in California, slated for spring 2012