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Listen to the Wind



Trisonica[™] Mini used in the Sundowner Winds research.

Dave Fitzjarrald PhD Senior Research Associate Atmospheric Sciences Research Center (ASRC) University of Albany, State University of New York (SUNY)

Strong winds off the coast of Santa Barbara, California are referred to as Sundowner winds. These winds can be quite intense. Dr. Dave Fitzjarrald and his technical support team from the Atmospheric Sciences Research Center (ASRC) at the University at Albany, SUNY are testing a hypothesis that postulates that Sundowner winds depend on the presence of critical layers above the mountain crests that control the propagation of gravity waves in the lee of the coastal range.

These winds, which can be aloft at a thousand meters or more in and above the boundary layer, haven't yet reached the surface. Yet when these winds occur during a fire episode, which is becoming more and more commonplace, the results can be catastrophic.

The approach that Dr. Fitzjarrald employed might be viewed as radical by some camps. Fitzjarrald's focus was to listen to the wind. "I want to filter out the environmental sounds from the ocean and surf and listen specifically to the wind," states Fitzjarrald. "My goal is to distinguish the local wind noise near the surface to examine how the marine layer moves beneath the convective boundary layer by the late afternoon. Another person's 'noise' will be our signal."

To accomplish this Fitzjarrald deployed a miniature ultrasonic anemometer, the TriSonica Mini Wind and Weather Sensor, obtained through Applied Technologies, Inc. (ATI). Placing the TriSonica near the surface allowed Fitzjarrald to capture characteristics of the winds that cause the waving motion of the wild oat grass, known as "honami", and see how the movement of the grass correlates to the turbulent flow field of the winds.

Read the Entire Story Here.

Vxsp Probe Array



This <u>Special 'Vx' Style Ultrasonic</u> <u>Anemometer Probe</u>, (a Vxsp), is a 3 axis, 3d, 15 cm, scientific Ultrasonic Anemometer. The design incorporates a full circle on both axes, which not only strengthens the arms, but protects the probe from getting caught on any cables and/or vegetation in close proximity. Like the regular "Vx" probe, it is capable of flux measurements in plant and forest canopies and any other turbulent areas where wind speeds are extremely low, and directions are highly unpredictable.

Download the Vxsp brochure.

How The ATI Sonic Anemometer Is Made

Dr. J. C. Kaimal, during his early studies of the atmosphere, decided that he needed the most accurate anemometer he could find. Unable to procure exactly what he needed; he designed his own ultrasonic anemometer. Working with him and his technology, ATI has

furthered his design, adding various orthogonal probe styles for different situations and our own non-orthogonal sonic anemometer. The ATI sonic anemometer continues to be the most accurate ultrasonic anemometer available today.

We do not manufacture hundreds of sonics which sit on the shelf until someone purchases one, instead we custom build every instrument or system ordered one at a time. <u>Visit our</u> <u>"Operational Features and Commands" page</u>.

Probe Arms and Bars

Our probe arms and probe bars are made of K100 Aluminum stock. They are machined with a precise tolerance of .001", bead-blasted and clear anodized to prevent damage from corrosion and the elements. <u>Visit our "Specifications" page</u>.

Transducers

Our transducers are also built to withstand the elements. Our transducers are fully tested for functionality and allowed to burn-in for a period of at least 2 weeks. During the burn-in the transducers are physically connected to our test electronics so that the signals of each transducer can be monitored.

Electronics Board

Our electronics boards are built using the latest wave solder technology. Each board is calibrated, fully tested and undergoes the same 2-week minimum burn-in. After the burn-in is complete the electronics boards are re-tested to verify everything is continuing to function perfectly. The pc board is then coated to weather-proof all the components.

Assembly

When your order is received, we carefully hand assemble your sonic system (along with any other components, options or add-ins in your order). Once assembled we then perform a final test. Your sonic is calibrated and tested to make sure that all the components of your sonic system are in perfect working order. Your sonic is then allowed to run for at least 24 hours using the cable and any other options or add-ons requested in your order. After that burn-in process is complete, your sonic is recalibrated and re-tested, once again verifying that all components of your order are fully functional and working together. <u>Visit our "Add-On Options" page</u>.

Delivery

Your order is then carefully packaged in special foam - designed for your sonic and shipped directly to you. When you receive your sonic system, we have every confidence that it will perform as your requirements demand. Thanks to Dr. Kaimal you will have the most accurate and precise scientific ultrasonic anemometer available.

We stand behind our products. Our anemometer is fully warranted against defects in material and workmanship for a period of 2 years from the date of shipment to you.

Something to Think About...



Thomas Jefferson

A voice from the past to lead us in the future:

"When we get piled upon one another in large cities, as in Europe, we shall become as corrupt as Europe."

"The democracy will cease to exist when you take away from those who are willing to work and give to those who would not."

"It is incumbent on every generation to pay its own debts as it goes."

"I predict future happiness for Americans if they can prevent the government, from wasting the labors of the people, under the pretense of taking care of them."

"My reading of history convinces me that most 'bad' government results from too much government."

"No free man shall ever be debarred the use of arms."

"The strongest reason for the people to retain the right to keep and bear arms is, as a last resort, to protect themselves against tyranny in government."

"The tree of liberty must be refreshed from time to time with the blood of patriots and tyrants."

"To compel a man to subsidize, with his taxes, the propagation of ideas which he disbelieves and abhors is sinful and tyrannical."

In 1802 Thomas Jefferson wrote:

"I believe that banking institutions are more dangerous to our liberties than standing armies. If the American people ever allow private banks to control the issue of their currency, first by inflation, then by deflation, the banks and corporations that will grow up around the banks, will deprive the people of all property – until their children wake-up homeless on the continent their fathers conquered."

John F. Kennedy held a dinner in the White House for a group of the brightest minds in the nation at that time. He made this statement: "This is perhaps the assembly of the most intelligence ever to gather at one time in the White House with the exception of when Thomas Jefferson dined alone."



