



Volume 10 - Winter 2015

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This Issue of Windwords

Welcome to the Winter 2015 issue of 'Windwords'. In this issue you will find the following topics...

For The Record - More on the History of Sonic Anemometry.

New and Interesting - High Altitude Test performed with sonic

Just The Facts - Flow Distortion Error Correction now built into the 'A' probe.

For the Fun of it - Very Punny!!

For those of you who have just received your first copy of Windwords - we invite you to take a look at some previous issues. The Windwords Archive can be found on our website: www.apptech.com/windwords.html

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Do you have a special application that requires a wind velocity measurement, but the off-the-shelf sonic anemometers don't physically fit your application? Call the ATI factory, we have no problem adapting and tailoring our sonic technology to your application.

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If you have more than one sonic anemometer on a tower, wouldn't it be better if they all took data at the same time?

Would you like your multiple sonic anemometers to all take data during the exact same time frame?

Would you like your sonics to be synchronized together?

The ATI Sonics can do all this, with the help of our DataPacker!!!

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For The Record...



For those of you that are interested in the history of the Sonic Anemometer development, we have a new paper on our website. There is a new link called "[History of Sonic Technology](#)", which now contains the original paper - "The Evolution of Sonic Anemometry". Added to this link is now a new paper - "The Kansas Experiments".

New and Interesting



We had a customer that wanted to see what altitude our sonic could attain and continue to function, so we made a trip to Ball Aerospace in Boulder, made use of their environmental chamber, and performed a high altitude test. The results of this test showed that the ATI 'V' probe could operate in the stratosphere. The signal at 150 Torr (40 km) was still there, but marginal. The customer required a bit more, so ATI has made some hardware and software changes that made the 'V' probe operate even better at this altitude. The probe will be flown to this altitude over Antarctica this fall. We'll keep you informed with the results when we get them.

If you have been following the stories about the orthogonal and non-orthogonal sonic anemometers, here is another document covering the next step of the problem. Tom Horst has done the testing and has found a solution for the non-orthogonal sonics.

Horst, T.W., S.R. Semmer, and G Maclean, 2015: [Correction of a non-orthogonal, three component sonic anemometer for flow distortion by transducer shadowing](#). *Boundary-Layer Meteorology*, **155**, 371-395.

This link will take you to the Springer website that allows you to see the paper directly.

Just The Facts

For the Fun of it!

Pun - A Play on Words

I'm reading a book about anti-gravity. I can't put it down.

I tried to catch some fog... I mist.

When chemists die they barium.

Jokes about German sausage are the wurst.

How does Moses make his tea? Hebrews it.

I stayed up all night to see where the sun went, then it dawned on me.

A dyslexic man walks into a bra.

Why were the Indians here first? They had reservations.

Energizer bunny arrested. Charged with battery.

I didn't like my beard at first, then it grew on me.

The crossed eyed teacher lost her job because she couldn't control her pupils.

When you get a bladder infection, urine trouble.

I wondered why the baseball was getting bigger, then it hit me.

Broken pencils are pointless.

England has no kidney bank, but it has a Liverpool.

All the toilets in the police station have been stolen. The police have nothing to go on.

I got a job at the bakery because I kneaded dough.

Velcro - what a rip off!

Haunted French pancakes give me the crepes.

Cartoonist found dead in home... Details are sketchy.

Venison for dinner? Oh deer!

Earthquake in Washington DC, obviously the government's fault.

I used to think I was indecisive, but now I'm not so sure.

Windwords Archive

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www.apptech.com/windwords



For those of you that have been following the differences between the Orthogonal and Non-orthogonal Sonic Anemometers, as you can see from the paper from Tom Horst, it has been noted that there are also flow distortions in the non-orthogonal anemometers. The flow distortion corrections, discussed and identified in our paper - "Flow Distortion Errors In A Non-Orthogonal Sonic Anemometer", (find this paper [here](#) on our website), these corrections can now be found included in the software of the ATI sonic 'A' probe. No need to perform any post processing of the data.

If you are in need of a special configuration of ultrasonic anemometer, or need something designed for your specific application, we would like to hear from you.

Some things already developed are:

- Sonic probe for cold climate, which would operate down to -200° C
- Special probe arms designed to adapt to the customer's equipment or application
- Software changes to provide special data as an output, with or without normal data
- Unique transducer arrangement to measure air flow through a very large area (20+ ft. path)
- Use of sonic technology to measure fast response temperature changes
- Use of sonic technology to build an occlusion alarm

Contact Us



Applied Technologies, Inc.
1501 South Sunset St. Unit C
Longmont, CO 80501

Phone: 303-684-8722
FAX: 303-684-8773

Hours: Mon-Fri 7:30-4:30 mst

news@apptech.com.

Website:
www.apptech.com

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