

LEOSPHERE NEWS

MAY 2008

« WHERE WILL YOU USE YOUR EZLIDAR TODAY? »

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EDITO

Happy Birthday LEOSPHERE!

Four years already of strong efforts, passion and commitment to promote lidar technology in Research and Industry. The revolution is on its way. People can now see the invisible, both during daytime and at night. It has brought forth new applications and new ways of thinking. Many improvements are

also being seen in the Wind Energy market with the first use of this “magic” tool.

Our small EZLIDARs are being used everywhere, under all types of weather conditions, in a plane, in a balloon, underground...

EZLIDARs are now present on every continent, and promote worldwide by our distributors.

We will continue to pursue our innovation efforts to enhance the capabilities of your systems.

Thank you for contributing to the success of atmospheric Lidar technology.



EZLIDAR™ IN AERONET TIGER-Z CAMPAIGN

In March Brent Holben, director of Aerosol Robotic Network ([AERONET](#)) at NASA/GSFC, visited our

premises in France and attended a live demonstration of EZ lidar instrument and formally define the term of collaboration with Leosphere for the coming “TIGER Z” campaign that will take place in India ([Leosphere](#)) from May 5th to June 30th, 2008. During this campaign, 12 sun-photometers, ground based EZLIDAR and CALIPSO (The Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation) will be involved to measure aerosol microphysical and optical properties in the Gange basin.

date space borne instruments.



Furthermore, the EZ LIDAR instrument will be deployed in Kanpur under the CALIPSO track and will vali-



IN BRIEF

- EZ LIDAR will be deployed in India in the framework of the TIGER-Z campaign
- EZ LIDAR was used in a subway rail station to track pollutants
- Deutsche Windguard tested Windcube™ performances
- EZ LIDAR performed test flights in England

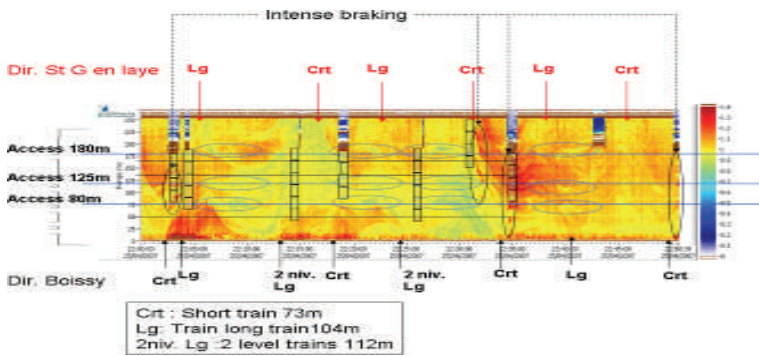
EZLIDAR™ TRACKING SUBWAY POLLUTION

In order to better characterize the dynamical processes driving the aerosol distribution in its subway network, the Réseau Agrée Transport Parisien (RATP) in Paris, France performed two experiments the Nation station using the EZ AEROSOL LIDAR™ system, developed by LEOSPHERE in partnership with the LSCE laboratory (CEA and CNRS). The performances of this system have enabled to qualitatively survey the aerosol spatial distribution along the 225 m of the platform and within the tunnel up to 360 m. It has made evident the variability of the aerosol load along the platform during some events, with high spatial (1.5m) and time resolution (between 1s to 1mn). Such continuous monitoring of the aerosol dynamic highlights the relative influences of particle resus-

pension, dispersion by the security ventilation systems, and inputs from outdoor environment. These results could eventually lead to modeling tools able to better assess the exposure of both RATP users and employees according to their location and length of their stay in the station. [Abstract](#)



ALS Lidar Measurements at RER A railway station Nation



- Continuous monitoring of the aerosol variability

FLYING EZLIDAR™

EZ ALS300 lidar flew on an unpressured plane of the National Environmental Research Council up to 4km high to perform some measurement tests. The Research Council is currently discussing the possibility of a measurement campaign in Chile.



ALS flight tests



EZ Lidar firing from the plane

THE MUSKETEER IN DENMARK

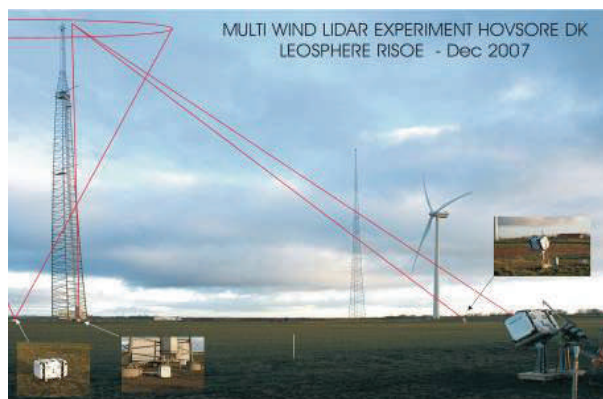


During December 2007, an innovative experiment

was conducted at the Risoe facility at Hovsore, DK, with four Windcube lidars simultaneously operating at the same time and place. Three of them were crossing their beams close to a 3D sonic anemometer at

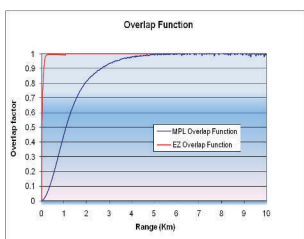
80 m height while the fourth was measuring the wind independently in conical scan mode. Wind time series have been compared together and with sonic anemometer data. The goal was to compare lidar volume averaged wind measurement with point measurement reference sensors and to demonstrate the feasibility of performing 3D turbulence measurements with lidars. A paper on the first analysis will be

presented during the [IS-ARS](#) conference, next June in Risoe/Roskilde, DK.



EZLIDAR™ FOR LIDAR NETWORKS

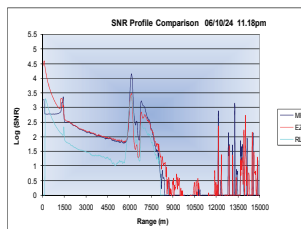
We assessed the performances of the EZ LIDAR™ instrument with regard to those of Micro Pulse Lidar (MPL) type 4 and Raman Lidar (RL), deployed at the



ARM site in Southern Great Plains, Oklahoma in

October 2006. The results of the ARM/SGP campaign bring the evidence that EZ retrieved data are comparable to those of RL and MPL Lidar instruments. Outdoor and unattended use capabilities of the EZ LIDAR, added to its performances makes this instrument a good candidate to be deployed in the growing global aerosol and cloud monitoring networks. [Abstract](#)

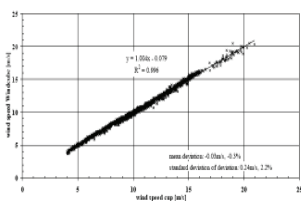
[ARM SGP Newsletter](#)



- Correlation Windcube—Mast 0.999
- 3D Turbulence measurements
- EZ Lidar comparable with NASA MPL Lidar
- EZ Lidar full overlap at 150m

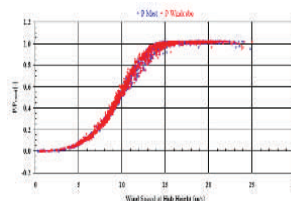
WINDGUARD VALIDATES WINCUBE™

Windcube™ lidar instru-



ment has been tested against conventional wind measurements with mast-

mounted cup anemometers of 98.7m by [Deutsche WindGuard](#) GmbH, a dynamically growing company that offers solutions in wind energy with over 20-years of tested relevant experience . A wind turbine power curve test was also performed by the application of the Windcube™.



Correlation with anemometer mast (black) and wind turbine power curve (red)



SALES NEWS AND ATTENDED EVENTS

Sales News

Ecotronics, our distributor in the USA for Atmospheric Research segment, has sold its first unit to *NASA / MPLnet* group led by Judd Welton.

The second serie of *Windcube™* is launched: two units have been delivered in March 2008; the other units will be delivered during the end of the first semester of 2008:

SIEMENS: Power curve verification

3E: Commercial onshore and offshore wind studies

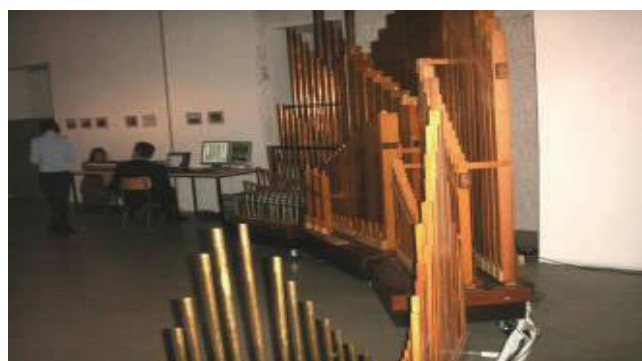
Attended Events

MAESTRO LIDAR

EWEC Conference Bruxelles, Belgium, April 2008. During the opening ceremony a *Windcube* coupled with the *Decap organ*, generated music based on the wind energy characteristics above Bruxelles. The *Decap organ* disposes of a recently developed technology allowing a perfect numerical control of the air pressure inside the various organ pipes. It was developed by Tony and Frank Decap. In the musical composition, Walter Hus has created an artistic communication using these two principles of wind-control. The event was a real happening with lots of people attending.



Leosphere booth at AMS 08, USA Thanks to many visitors of our stand!



Windcube™ coupled with the DECAP organ

AGENDA

You will be able to meet Leosphere's team during the upcoming events:



AWEA, Wind Power Houston, TX, USA 1-4 June, **booth 1559**



AOGS, Busan, Korea, 16-20 June



ILRC, Boulder, CO, USA, 23-27 June.



ISARS, Roskild, Denmark, 23-25 June



HUSUM Wind Energy, Husum, Germany, 9-13 September



ICCP, Cancun, Mexico, 7-11 July

If you would like to receive each EZ Lidar™ news publication please send a request to newsletter@leosphere.fr, with the term "subscribe" in the subject of your e-mail.

If you do not want to receive this newsletter anymore. Please inform us in newsletter@leosphere.fr, with the term "unsubscribe" in the subject of your e-mail.

RETURN ON INNOVATION

Leosphere is 100% specialized in LIDAR (laser -radar) manufacturing for remote atmospheric observations. Its corporate mission is to provide clients with a high-end and differentiated range of products and services based upon 3 dimensions : The EZ LIDAR™ concept, a strong atmospheric sciences background and, an exclusive dual range of aerosol LIDAR and wind LIDAR systems.

Leosphere controls the entire chain of know-how that guarantees that the performances and features of its final products will match the users initial expectations: from atmospheric research, optoelectronics development, and data treatment, to industrial solutions design and assembly.

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