AVAILABLE FOR TRANSFER

AeroMap

Near Infrared Lidar for dust and aerosol 3D Mapping

Keywords: Lidar, full waveform, aerosol, dust, 3D mapping

TECHNOLOGY

The system developed by INO is a full waveform Lidar which can be used to map dust and aerosols in air. This system is a compact and fairly low-cost Lidar, based on a complete digital signal acquisition platform. AeroMap is able to detect and map relative dust and aerosol concentration in the air. It also includes a context camera to help identifying sources of dust and aerosols. To deliver maps of absolute concentration of dust and aerosol, an in-situ sensor can be used as a calibration point.

APPLICATIONS

AeroMap offers important advantages over conventional point sensors for dust and aerosol monitoring and mapping purposes in many applications, such as:

- Mining: dust mapping and monitoring, dust cloud tracking, ventilation on demand, optimization of dust suppression techniques, etc.
- Bulk material handling: identification of dust generating processes, fence line monitoring, cloud mapping and tracking, etc.
- Construction and transportation: fugitive dust emission monitoring, dust control on unpaved roads, etc.

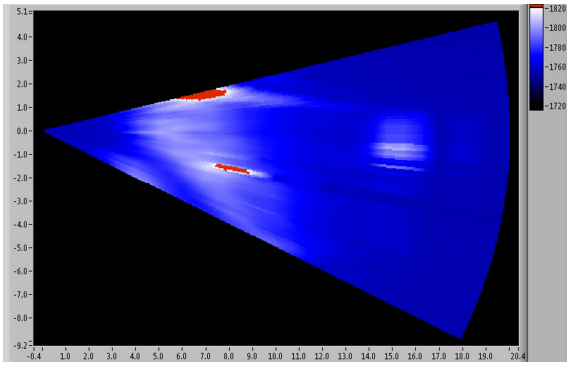
INTELLECTUAL PROPERTIES

List of patents available on request.

STATE OF DEVELOPMENT

The AeroMap has been developed up to the field deployable level. Multiple validation tests have been conducted in industrial applications such as: cloud mapping, monitoring of dust generating processes, measuring efficiency of dust suppression techniques, etc.

AeroMap: NIR full waveform LIDAR



2D Map of dust concentration

INO OFFERS

R&D CONTRACTS PROTOTYPING PREPRODUCTION
SHORT-RUN PRODUCTION TECHNOLOGY TRANSFERS

COMM-14007

AVAILABLE FOR TRANSFER

AeroMap

Near Infrared Lidar for dust and aerosol 3D Mapping

COMPETITIVE ADVANTAGES

Features	Advantages	Benefits
Measures relative concentration of aerosol over a range of 150 m with resolution up to 20 cm (typically 75 cm)	Distribution of aerosol concentration along line-of-sight	Equivalent to hundreds of point sensors located along line-of-sight
Typical limit of detection of 50 µg/m^3	Same order of magnitude of air quality standards for total suspended particulates	Can be used to monitor several types of dust and aerosols generating processes
Eye safe	Harmless to workers	Can be installed on industrial sites or cities
Context camera	Helps defining the monitoring area. Provides pictures of "events"	Easy deployment. Better understanding of aerosol generation processes
Pan & Tilt Unit with mapping speed-up to 20°/s	Delivers 2D and 3D maps in near real-time	Better understanding of aerosol transport processes and source localization
On-board processing	Real-time display of aerosol concentration	Can be used to trigger alarms

BUSINESS OPPORTUNITY

INO is looking for integrators and manufacturers, already involved in the industrial and/or environmental monitoring sector, who would like the opportunity to use and integrate this platform in specific applications. INO is also seeking entrepreneurs interested in investing in this technology in order to develop it as a product to address specific commercial markets.

INO (Québec City, Canada), is a private corporation and Canada's largest center of expertise in optics & photonics. It entered its 26th year of operation in 2013. As a leading technology developer and provider, INO draws on its core expertise in optics and photonics to supply industry with solutions that enable ever-more competitive products and production processes. A top industry partner, INO provides comprehensive services to entrepreneurs and industrial clients.

CONTACT
François Châteauneuf , Ph. D.
Program Manager, Environment
Francois.chateauneuf@ino.ca

For the complete list of technologies available for transfer
www.ino.ca/available technologies

PRINTED IN CANADA

INO
2740 Einstein Street, Québec City, Québec, G1P 4S4 Canada

418.657.7006 / 1.866.657.7406
www.ino.ca / info@ino.ca