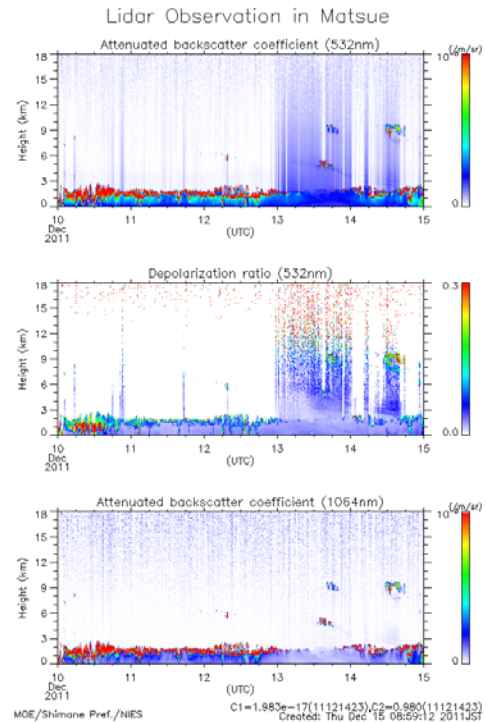


LIDAR SYSTEM

Model PL2B1D

Two-Wavelength (1064nm, 532nm) Dual-Polarization (532nm) Lidar System: NIES model*
*The model used in AD-Net, an Asian component of GAW Aerosol Lidar Network (GALION)

Model PL2B1D is an instrument which transmits a laser beam to the atmosphere and receives backscattered light from aerosols. Model PL2B1D is useful for observing profiles of backscattering coefficient or extinction coefficient. With the dual-polarization measurement function, non-sphericity of scatterers can be measured.



General

LIDAR for measuring the dust and aerosols distribution in the atmosphere

General features

The LIDAR shall observe vertical distributions of mineral dust and air pollution aerosols continuously by transmitting the laser pulses and receiving the returned scattering signals.

The LIDAR shall observe mineral dust distribution with the Dual-Polarization Dual-Polarization LIDAR method. The LIDAR shall display the backscattering signal intensities and the depolarization for monitoring the observation status.

It shall also process the data to derive the extinction coefficients of mineral dust and air pollution aerosols, the attenuated backscattering coefficient, etc.

Components

Laser transmitter / receiver unit

Measurement control / data processing system and software

PREDE PREDE CO., LTD.

Sasamoto Bldg 26-8 Kamidaira 1-chome Fussa-shi 197-0012 Tokyo Japan

TEL+81-42-539-3755 FAX +81-42-539-3757

URL <http://www.prede.com/> e-mail sales@prede.com

Specification		
Transmitter	Light source	Flash lamp pumped Nd:YAG laser
	Output energy	20 mJ (532nm) 20 mJ(1064nm)
	Repetition rate	10 Hz (typical) / 20 Hz (max)
Receiver	Telescope	Diameter 20 cm
	Detector	Field of view 1 mrad. (typical)
Data acquisition system	Transient recorder	Accuracy 12 bits Vertical Resolution 6 m Recorded Height Range 0 – 24 km Temporal Resolution 15 min (typical)
Measurement control		Automatic, programmable and remote control
Data processing system		Standard data products: attenuated backscattering coefficient (1064nm, 532nm), volume depolarization ratio (532nm), total aerosol extinction coefficient (532nm), dust extinction coefficient (532nm), spherical-aerosol extinction coefficient (532nm), planetary boundary layer height (mixed layer height), cloud base height.
Power requirements		100 V AC 50/60 Hz 10 A

This LIDAR system is designed by NIES (National Institute for Environmental Studies) (JAPAN) and the function is guaranteed by NIES.

However the laser system is maintained by QBIC LASER SYSTEMS INC..

The below image is an example of an installed LIDAR system (at NIES).

The skylight window with heater, computer rack, table, chair shown in the image are optional.

We would be glad to have consulting service for installation with customers.

As an option we could also set up containers.

References

- A. Shimizu, A., N. Sugimoto, I. Matsui, K. Arai, I. Uno, T. Murayama, N. Kagawa, K. Aoki, A. Uchiyama, and A. Yamazaki, Continuous observations of Asian dust and other aerosols by polarization lidar in China and Japan during ACE-Asia, *J. Geophys. Res.*, 109, D19S17, doi:10.1029/2002JD003253, 2004.
- N. Sugimoto, I. Uno, M. Nishikawa, A. Shimizu, I. Matsui, X. Dong, Y. Chen, H. Quan, Record heavy Asian dust in Beijing in 2002: Observations and model analysis of recent events, *Geophysical Research Letters*, Vol. 30, No. 12, 1640, doi:10.1029/2002GL016349, 2003.
- N. Sugimoto, I. Matsui, A. Shimizu, T. Nishizawa, Y. Hara, C. Xie, I. Uno, K. Yumimoto, Z. Wang, S-C. Yoon, Lidar Network Observations of Tropospheric Aerosols, *Lidar Remote Sensing for Environmental Monitoring IX*, edited by Upendra N. Singh, Kazuhiro Asai, Achuthan Jayaraman *Proc. of SPIE* Vol. 7153, 2008 doi: 10.1117/12.806540.