5.6 Ceilometer

(1) Personnel (*: Leg-1, **: Leg-2, ***: Leg-1+2)

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(2) Objectives

The information of cloud base height and the liquid water amount around cloud base is important to understand the process on formation of the cloud. As one of the methods to measure them, the ceilometer observation was carried out.

(3) Methods

We measured cloud base height and backscatter profile using ceilometer (CT-25K, VAISALA, Finland). Major parameters for the measurement configuration are as follows;

Laser source:	Indium Gallium Arsenide (InGaAs) Diode
Transmitting center wavelength:	905±5 nm at 25 degC
Transmitting average power:	8.9 mW
Repetition rate:	5.57 kHz
Detector:	Silicon avalanche photodiode (APD)
	Responsibility at 905 nm: 65 A/W
Measurement range:	0 ~ 7.5 km
Resolution:	50 ft in full range
Sampling rate:	60 sec
Sky Condition	0, 1, 3, 5, 7, 8 oktas (9: Vertical Visibility)
	(0:Sky Clear, 1:Few, 3:Scattered, 5-7:Broken, 8:Overcast)

On the archive dataset, cloud base height and backscatter profile are recorded with the resolution of 30 m (100 ft).

(4) Preliminary results

Fig.5.6-1 shows the time series of the lowest, second and third cloud base height during the cruise.

(5) Data archives

The raw data obtained during this cruise will be submitted to the Data Management Group (DMG) of JAMSTEC.

(6) Remarks (Times in UTC)

1) The observation was carried out within following periods.

Leg1: 12:00 25th Sep. 2011 to 00:00 26th Oct. 2011

Leg2: 00:00 29th Oct. 2011 to 03:00 1st Dec. 2011

2) Window was cleaned at following time.

00:45 23rd Sep. 2011

08:40 25th Sep. 2011

10:50 10th Oct. 2011

05:25 - 05:27 20th Oct. 2011

03:11 - 03:12 25th Oct. 2011

02:16 2nd Nov. 2011

01:48 10th Nov. 2011

04:13 - 04:14 11th Nov. 2011

01:43 25th Nov. 2011

3) The following time, data is not available.

05:32 9th Oct. 2011

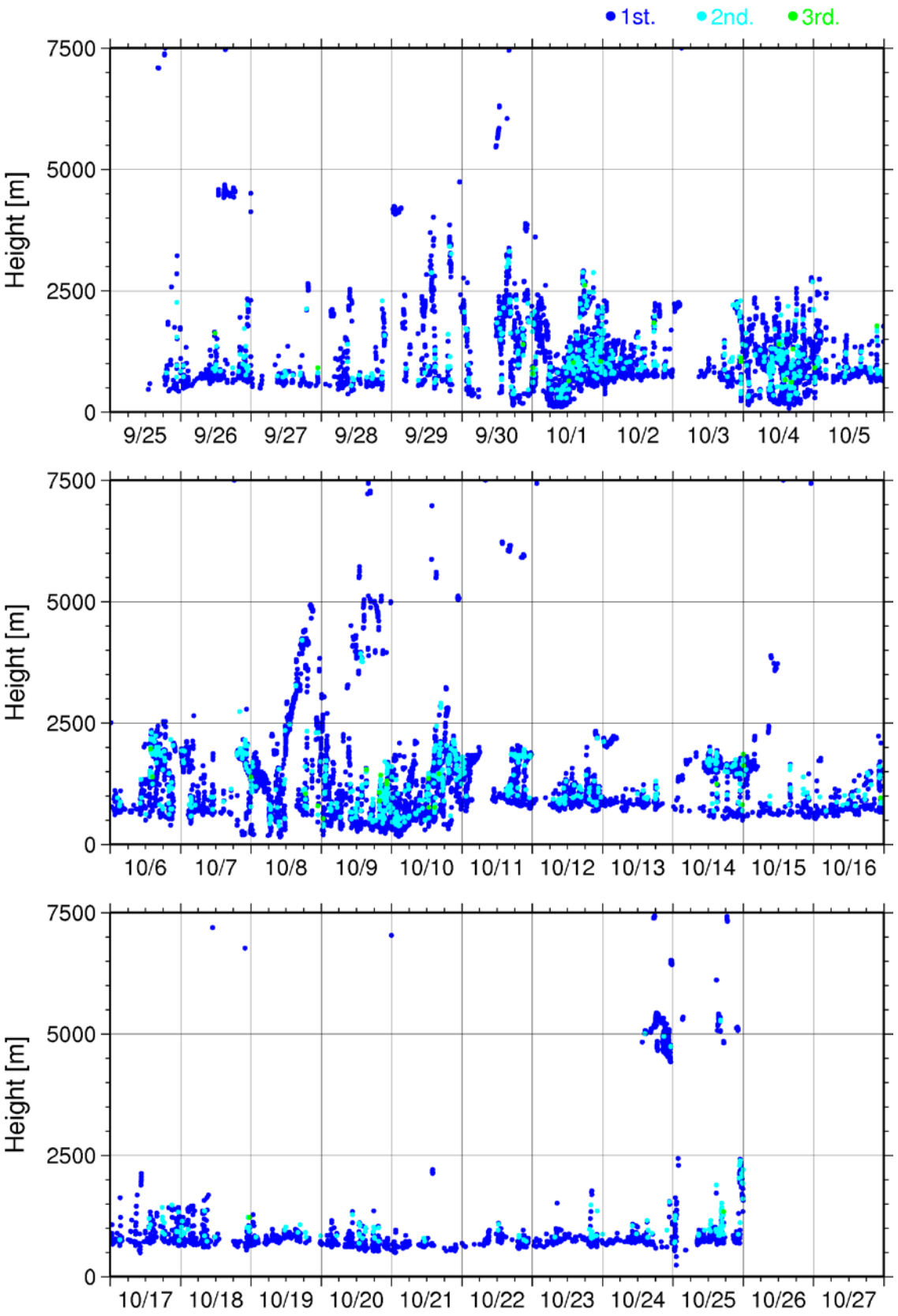

Fig. 5.6-1 First, 2nd and 3rd lowest cloud base height during the MR11-07 cruise.

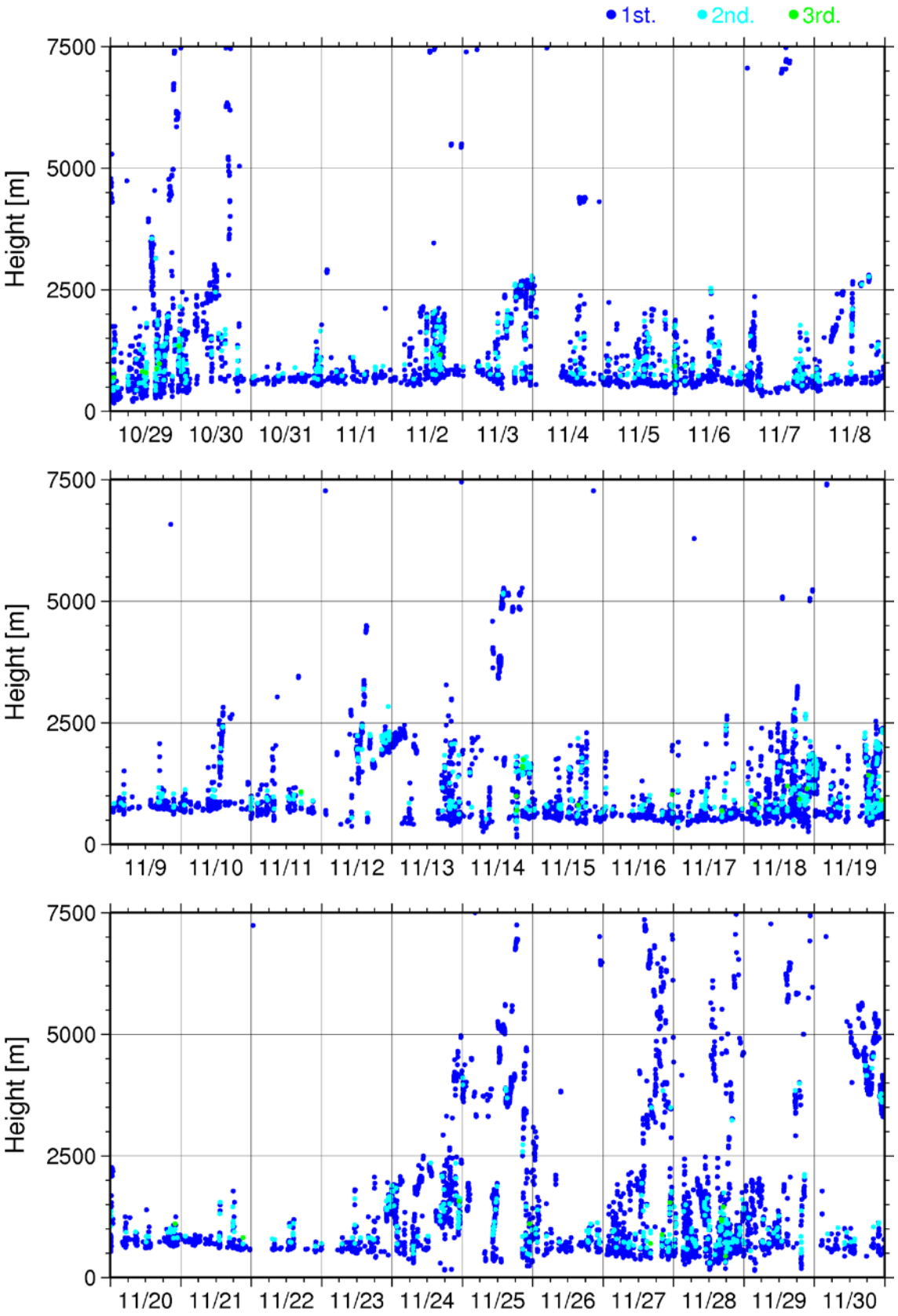

Fig. 5.6-1 (continued)