Review for Air Temperature Cange before the 1993 Hokkaido SW-OFF Earthquake

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http://seismo.ee.uec.ac.jp/index.html

1.Introduction

Hokkaido SW-OFF Earthquake occurred on July 12, 1993, then the temperature rise of night was ago (the 13 days and ten days).Usually, although temperature became monotonous reduction night, the temperature rise value was 5.1 degrees in front of 2.7 degrees and ten days 13 days ago night.This phenomenon may have been the sign of an earthquake and reports results of an investigation.

2. Circumstances

Scientist A.A.Tronin (1996) of circumstances Russia studied the relation of the IR-band picture of Satellite NOAA, and an earthquake. He analyzed the NOAA picture of about 10000 sheets in the central Asia domain. He reported that significant statistical correlation was between a temperature rise and the occurrence of an earthquake.If satellite investigation progresses earthquake reserch also progresses further.By the technique of using a temperature 1.5m above ground, i.e. air temperature data, instead of satellite data, Inubushi and Hayakawa (2002) investigated the Hyogo southern part earthquake in 1995.Uda (2002) showed that the visible picture of the clouds of the Okushiri island neighborhood and the aftershock distribution map to Hokkaido SW-OFF earthquake and the main shock are extremely in agreement 11 days before Hokkaido SW-OFF earthquake, and that the surface temperature seen from the satellite of a gaseous body was high temperature as clouds.So we investigated about this earthquake.

3. Data of the phenomenon

3.1 Rise of Night Temperature

The point of the Okushiri neighborhood observing AMeDAS is shown in Fig. 1. 6 points of Hokkaido and the method of Hinokiyama observing AMeDAS were investigated.The night temperature rise values Z from 1992 which it is in the previous year of the offing earthquake of the Hokkaido southwest to 1994 are computed about the period on June 23 to July 12, and a result is shown in Table 1.Temperature at Z=(Tmp MAX [at 20:00 - following 04:00]) - Tmp 20:00

The largest value in Table 1 was 5.1 degrees.According to the data investigation for Kobe 10 years, there are only that Z becomes 3cases of 3651 cases.(4.0 degrees or more.)

3.2 Series Change Every Day at the Time of Regular Temperature

As for temperature change of Wakkanai of the Hokkaido west coast and Rumoi of every day 16 o'clock, temperature rose abruptly almost simultaneously with jet of the gaseous body on July 1, 1993. It became clear to dive almost synchronizing with main shock generating.While July 1, 1993 - 3 have a stationary front in the Honshu southern coast, in Sapporo, they are covered by the migratory anticyclone and are fine weather.a night temperature rise and a gaseous body -- generating and the temperature change in case of an earthquake cannot be explained in weather

4. Consideration

We cannot have firm belief.Investigation will be advanced further from now on and research of correlation nature will be advanced.

表1．1992～1994年　奥尻島近辺の夜間気温上昇[°C]

	瀬棚	今金	奥尻	熊石	鶉	江差	
920623	0.3	0	0.1	2.9	0	0	
920624	0	0	0	0	0	0	
920625	0	0	0	0.7	0	0	
920626	0	0	0.3	0	0	0	
920627	0	0	0	0	0	0	
920628	0	0	0	0	0	0	
920629	0	0	0	0	0	0	
920630	0	0	0	0.1	0	0	
920701	0	0	0.6	1	0	0.3	
920702	1.3	0	0.6	0.2	0	0.1	
920703	0.5	0	0	0	0	0	
920704	0	0	0	0	0	0	
920705	0.2	0	1	0.2	0	0	
920706	0	0	0	0	0	0	
920707	0	0	0	0.3	0	0	
920708	0.3	0	0	0.2	0	0	
920709	0	0	0	0.3	0.2	0.2	
920710	0	0	0.2	0	0	0	
920711	0.1	0	1.2	0	0	0	
合計	2.7	0	4	5.9	0.2	0.6	13.4
930623	0	0	0	0	0	0	
930624	0	0	1.5	0.9	0	0	
930625	0.5	0.1	0	0.3	0	0	
930626	0.1	0	0.1	0	0	0	
930627	0.4	0	0.2	0	0	0	
930628	0.8	0	0.5	0	0	0	
930629	0	0	1.5	2.7	1.1	0	
930630	0	0	0	0	0	0	
930701	0	0	0	0	0	0	
930702	0	0	0	5.1	0	0	
930703	0	0	0	0	0	0	
930704	0	0	0.5	0	0	0	
930705	0	0	0	0	0	0	
930706	0	0	0	0	0	0	
930707	0.1	0	0	0	0	0	
930708	0.1	0	0	0	0	0	
930709	0	0	0	0	0	0	
930710	0	0.1	0.7	0	0	0	
930711	0	0	0.1	0.2	0	0	
合計	2	0.2	5.1	9.2	1.1	0	17.6
940623	0	0	0	0	0	0	
940624	0	0.7	0	0.3	0	0	
940625	0	0	0	0	0	0	
940626	0	0	0	0.5	0	0.6	
940627	0.4	0.5	1.2	0.1	0	0	
940628	0	0	0	0	0	0	
940629	0	0	0.4	0	0	0.5	
940630	0	0.2	0	0.9	0	0	
940701	0	0	0	0	0	1	
940702	2.2	0.1	2	0.2	2.4	1.1	
940703	0	0.9	0	1	0	0	
940704	0	0	1.5	0.2	0	0.8	
940705	0	0	0	0	0	0	
940706	0	0	0	0	0	0	
940707	0.6	0.3	0	0.3	0	0	
940708	0.2	0.1	0	0.9	0	0	
940709	0	0	0.2	0.9	0.1	0	
940710	0.3	0.1	2.5	0.7	1.2	0.9	
940711	0	0.5	0	0	0	0.2	
合計	3.7	3.4	7.8	6	3.7	5.1	29.7

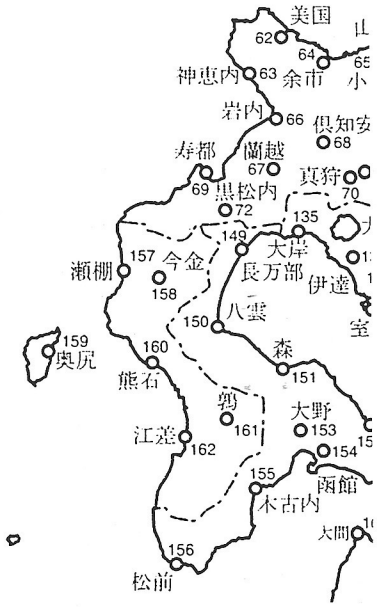

図１．アメダス観測点

出典：「拡張アメダス気象データ」日本建設学会

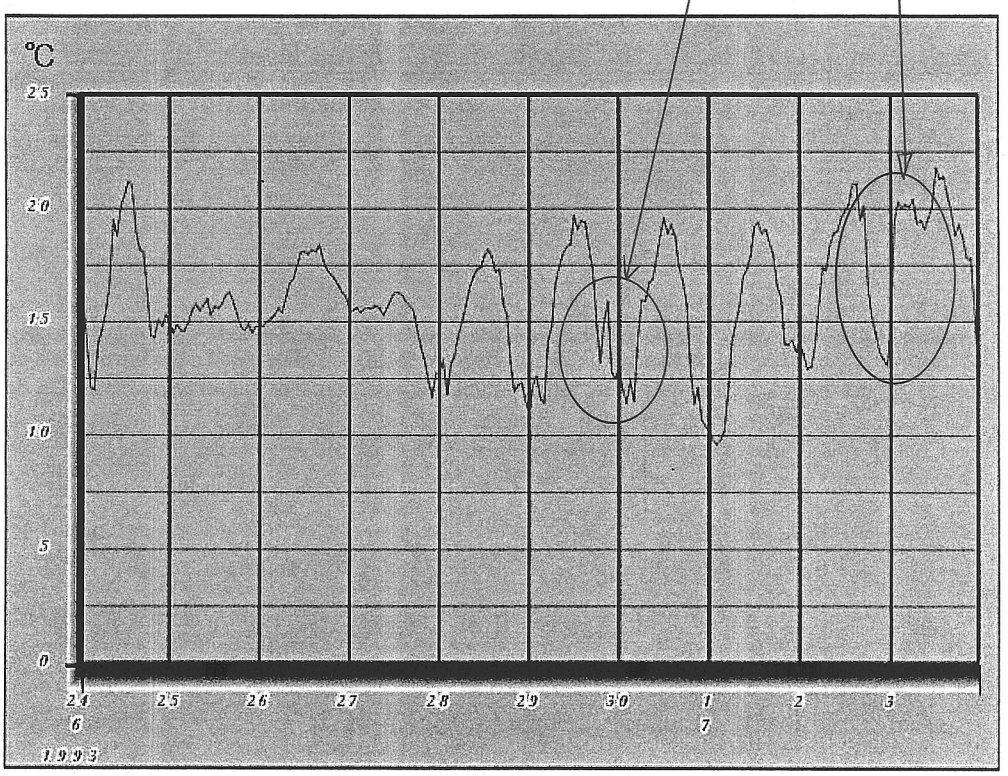

図２．1993年6月24日～７月3日　熊石における夜間気温上昇事例