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11. *Tripartite Observations of Microseisms at Sakata (Second Paper).*

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The first tripartite observations has been made at the northern part of the city of Sakata in February 1956, and the results was reported in this journal[1]. In December of the same year the second observations were carried out about 2 km SE from the first ones, or at the south-eastern end of the city, on alluvial plain. The first ones were on a sand dune, so the authors aimed to find the effect of geology of station on microseisms. Seismographs used were equal in both cases, but in the former case the length of sides of the triangle net of observation were about 380 m. This time, sides were elongated to about 600 m, and moreover, the number of stations was increased to four to study the accuracy of the tripartite observatins. Namely, in a few cases, observations were made at four stations simultaneously, and direction of propagation and velocity of microseisms were calculated for two tripartite observations.

The positions of the stations are shown in Fig. 1; station A was set up in the Kamegasaki Primary School, station B in the Pump Station of the Sakata Water

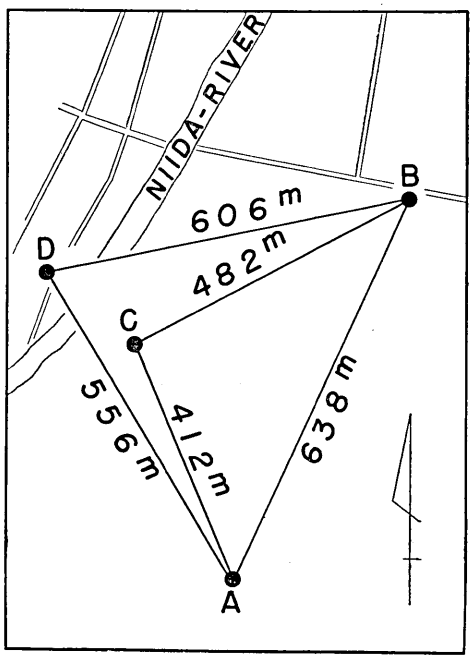

Fig. 1. Observation net.

1) F. KISHINOUYE and I. SHIDA, *Bull. Earthq. Res. Inst.*, **34** (1956), 301–306.

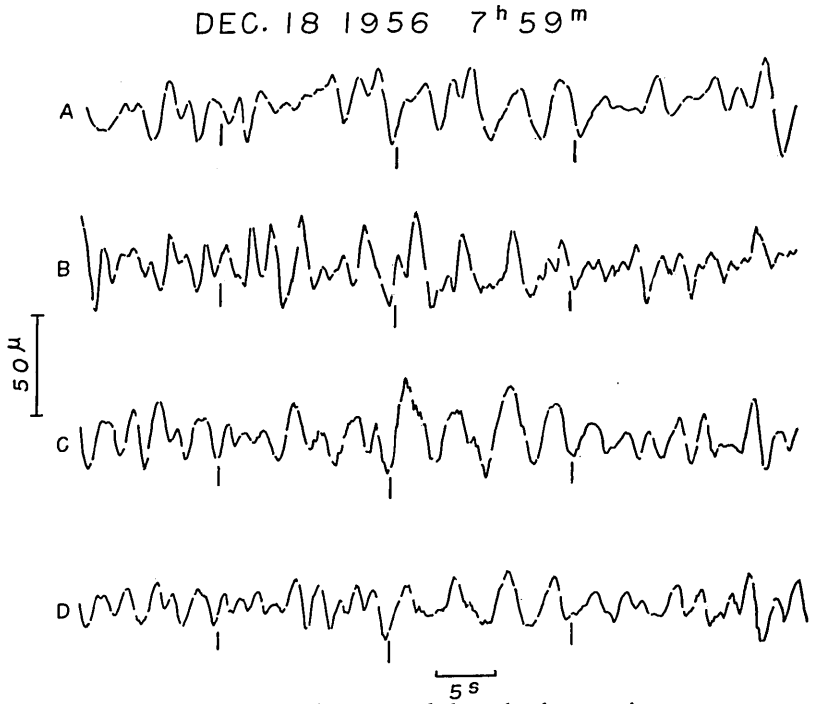

Fig. 2. Microseisms recorded at the four stations.

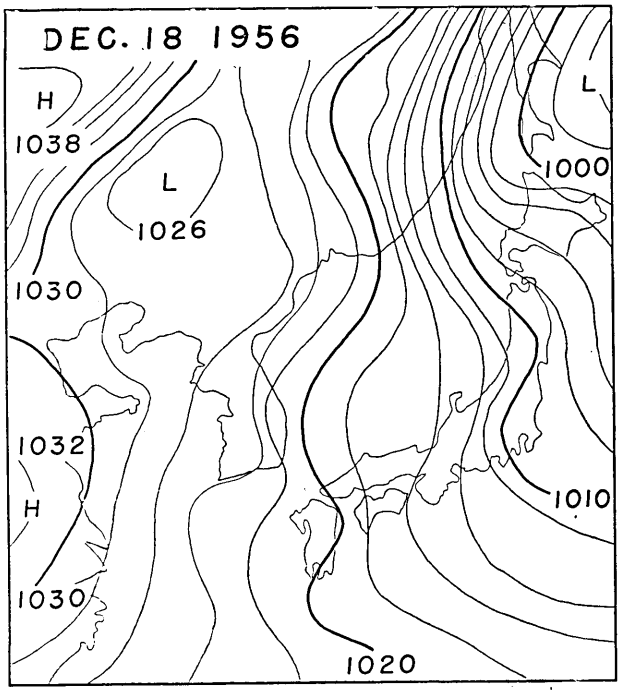

Fig. 3. Weather map.

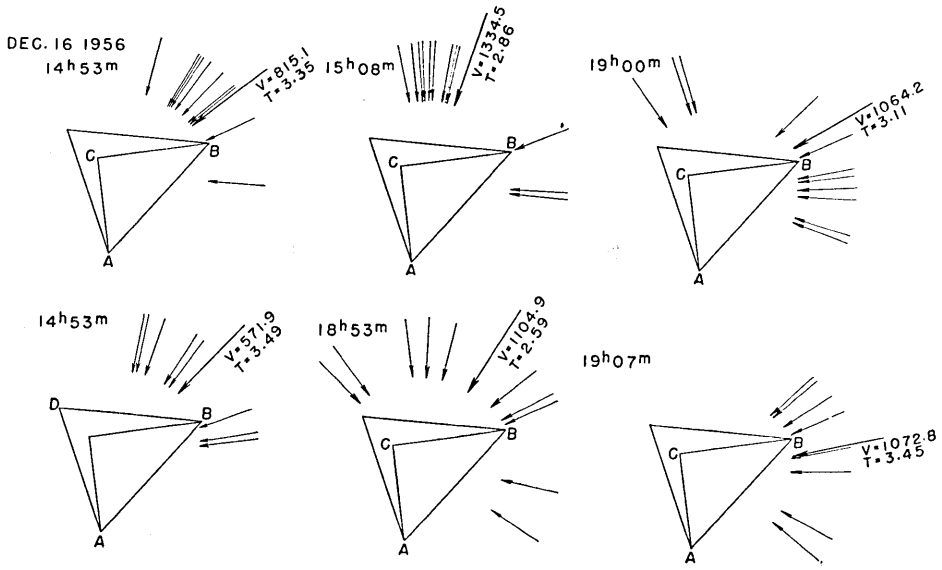
DEC. 16 1956
14h53m
V=815.1
T=3.35
15h08m
V=1334.5
T=2.86
19h00m
V=1064.2
T=3.11
14h53m
V=971.9
T=3.49
18h53m
V=1104.9
T=2.59
19h07m
V=1072.8
T=3.45
A
B
C
D

Fig. 4a.

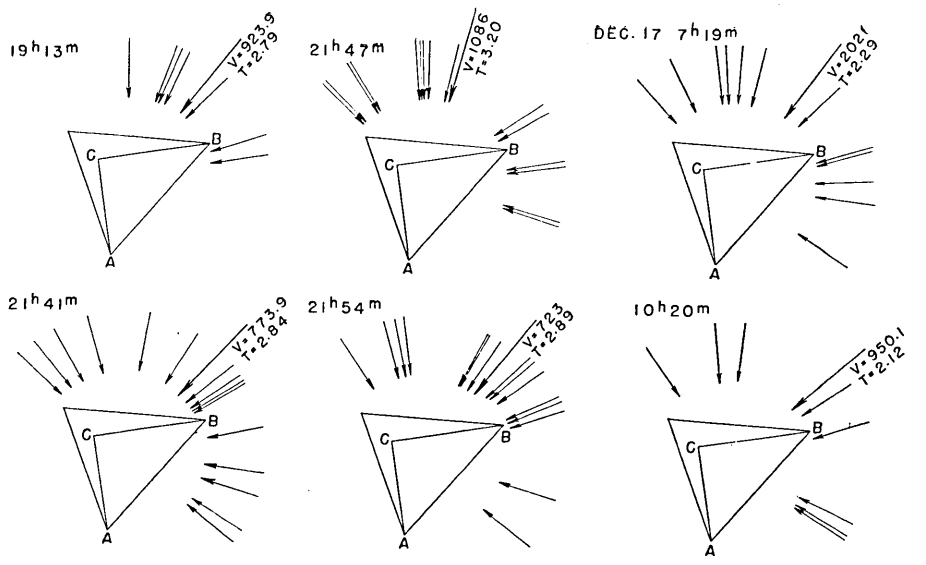
19h13m
V=923.9
T=2.79
21h47m
V=1086
T=3.20
DEC. 17 7h19m
V=2021
T=2.29
21h41m
V=773.9
T=2.84
21h54m
V=723
T=2.89
10h20m
V=950.1
T=2.12
A
B
C

Fig. 4b.

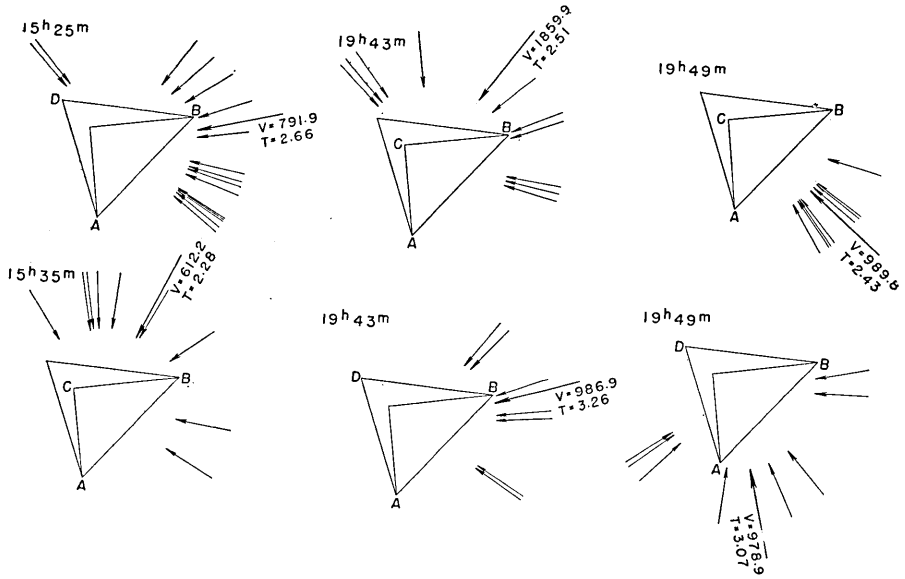
15h25m
V=791.9
T=2.66
19h43m
V=1859.9
T=2.51
19h49m
V=989.6
T=2.43
15h35m
V=612.2
T=2.28
19h43m
V=986.9
T=3.26
19h49m
V=978.9
T=3.07

Fig. 4c.

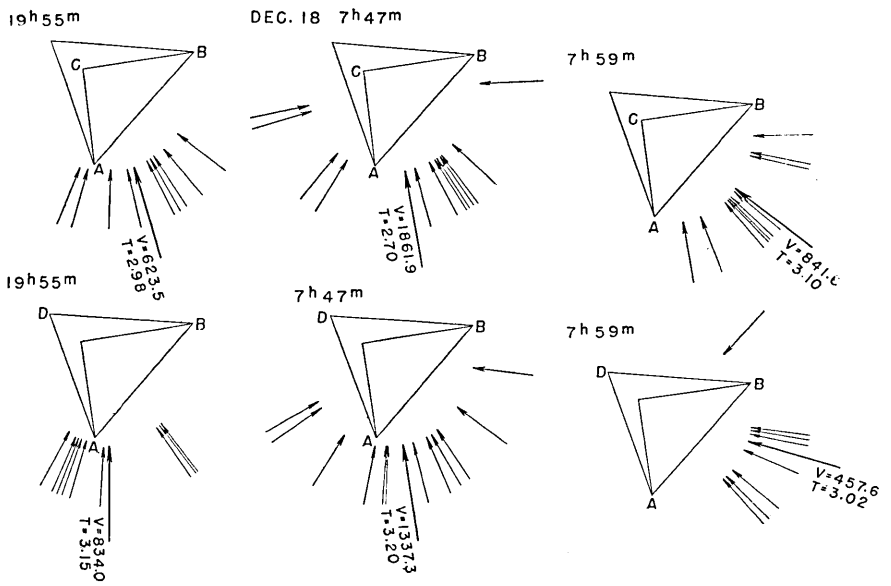
19h55m
V=623.5
T=2.98
DEC. 18 7h47m
V=1861.9
T=2.70
7h59m
V=841.6
T=3.10
19h55m
V=834.0
T=3.15
7h47m
V=1337.3
T=3.20
7h59m
V=457.6
T=3.02

Fig. 4d.

Supply, the station C in the Sakata Higashi High School, and the station D in the Sakata High School for Commerce and Industry. Portions of the records are shown in Fig. 2. These stations were near roads, so in day time records there were disturbed by traffics. Then the observations were mostly carried out at night to dodge traffics. The weather condition at the period of the observations are shown in Fig. 3. It was a typical weather in winter in Japan, and at Sakata strong cold wind brew with a little snow.

The velocity of propagation was obtained about 1000 m/s in an average, and period of vibration about 2.8 sec. In the previous observation, the velocity was obtained as 750 m/s and period 4.0 sec. Then wavelength deduced from velocity multiplied by period in both cases are nearly equal. And from these values the writers could not find the effect of geology on microseisms.

Propagation direction of microseisms changed in fairly large angle as in the previous observations by the writers (Fig. 4). Most waves come from N or NE, and this direction did not fit to that of Japan Sea which was very rough at that time. The direction of microseisms pointed to Northeastern Sea off the Japan Main Land which was also very rough. This result might agree with that in the writers' first paper.

Station C and D were near but on the opposite sides of River Niida. Seismograms at both stations were in accord with each other. The correspondence might be due to the smallness of the river, or to the foundations of the stations are on the same geological structure. One of the writer[2] described the question of the effect of geological tectonic line on microseisms, but this case might be opposite to it. The writers have to investigate this question by observations at many other places.

The writers express here their thanks to the staff of the Sakata City Office for their aid in this investigation.

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2) F. KISHINOUYE, *Bull. Earthq. Res. Inst.*, **35** (1957), 541.

11. 酒田における土地の脈動の三点観測 (第2報)

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脈動が地盤によつてどのように違うかを見るために，前回は砂丘の上で測定したが今回は沖積地である酒田市街の南東端において同様の観測を行つた．気圧配置は「西高東低」で酒田においては少し雪を伴つた強風が吹いていた．観測結果は図に示した通りである．伝播速度は 1000 m/s で周期 2.8 秒で．前回は 750 m/s で 4 秒であつたので，これ等の値から波長を求めると殆ど等しい．このような結果から地盤の影響について結論を出すにはまだ早いと思う．伝播方向は．日本海が荒れていたにも拘らずその方をむかず，前回と同様脈動は北太平洋の波によつて起されるように見える．観測点 C と D とは新井田川の両岸にあつた．以前に東京附近で多摩川の両岸で脈動の差異を認めたのでその点を調べたが，その差は認められなかつた，ここは地質の差がはつきりした所でないので脈動に差が表われなかつたのかも知れないが，この問題は更に他の場所で調べて見たい．